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# **THE BALANCE OF BIRTHS AND DEATHS**

**VOLUME II  
EASTERN AND SOUTHERN  
EUROPE**

**BY  
ROBERT R. KUCZYNSKI**

**WASHINGTON, D. C.  
THE BROOKINGS INSTITUTION  
1931**

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## DIRECTOR'S PREFACE

This study, like Volume I of the series on *The Balance of Births and Deaths*, makes no attempt to analyze the social causes or possible economic and political consequences of the trend of population growth or decline in the countries with which it deals. Nor does it undertake to forecast the future trend of population. The author limits himself to making as accurate a statement as possible of the facts as they now stand.

Volume I of the series, dealing with Western and Northern Europe, showed that fertility of the women in that section of the world is now so low that, unless it rises, these populations are doomed to die out even if mortality were to decrease beyond reasonable expectations. This second volume shows that similar conditions prevail in some countries of Central Europe, like Austria, Estonia, and Latvia. In other countries, for instance Italy and Poland, the population is still growing, but at a slower rate than in former times since fertility has decreased much more than mortality. The only European country which has a genuine yearly increase of over 1 per cent—as a matter of fact almost 2 per cent—is Russia. The times are past, it is true, when seven children on an average were born to the Russian woman, but this number is still 5.5, or more than twice as high as in Western and Northern Europe or in the United States.

The earlier volume showed that there was no foundation for the general belief that the decrease of fertility in Western and Northern Europe was offset by a decrease of mortality. In this volume we see that there is no foundation for the general belief that the decrease of fertility is confined to the nations of the Western civilization.

The author, in collecting the material for this volume, visited the central statistical offices in Vienna, Prague, Budapest, Belgrade, Warsaw, Moscow, Madrid, and Lisbon. The assistance rendered him by the various agencies to whom he applied is acknowledged in his note on the next page. The members of the Institute of Economics staff who served on the committee which co-operated with the author in the preparation of this volume were Leo Pasvolsky and Charles O. Hardy.

EDWIN G. NOURSE

*Director*

Institute of Economics

July, 1931

## AUTHOR'S NOTE

The printed sources mainly used in preparing this volume were the census reports and the vital statistics published by the governments of the respective countries. Many of these documents were found in the Statistical Section of the Surgeon General's Library in Washington or in the Library of Congress, and others were consulted in the libraries of the central statistical offices in Berlin, Paris, and other European capitals. Examination of the printed documents, moreover, was greatly facilitated through the generosity with which various statistical offices supplied copies to the author. But some of the statistical tables necessary for the preparation of this volume have not yet been published, and others will never be published. The author is greatly indebted to the central statistical offices of Austria, Czechoslovakia, Hungary, Latvia, Poland, Russia, and Spain, to the Economics and Statistical Section of the Committee for the Economic Plan of the Division of Moscow and to the Demographic Institute of the Ukrainian Academy of Sciences in Kiev for most valuable additional material furnished in manuscript form. He is likewise greatly indebted to the central statistical offices of Czechoslovakia, Italy, and Latvia for the revision of some tables submitted to them.

Most of the statistical documents are published exclusively in the official language of the country. In a very few cases, the text or an abstract of it is also given in French or German. More frequently, the headings of the tables are also given in French or German. Occasionally, the title of the volume only is also given in French. In quoting these various sources we were guided by the aim

of making it as easy as possible for the English-speaking student to consult the volumes concerned. If, therefore, the title was given only in the language of the country, we have quoted that title, adding, if necessary, an English translation. If, however, the title was given also in French, we gave the French title only. If, therefore, the reader finds a title such as "L'Albanie en 1927" he should not expect, upon asking for this volume in a library, to find a French book. The book is written in Albanian; only the title, the headings of the tables, etc., are given in French as well as Albanian. In case the entire volume or article is published in another than the country's official language, we have so stated.

ROBERT R. KUCZYNSKI.

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**THE BALANCE OF  
BIRTHS AND DEATHS**





## CHAPTER I

### INTRODUCTION

The preceding volume, dealing with Western and Northern Europe, covered a region where birth statistics are so satisfactory and, at the same time, so much alike in their results, that it was both feasible and helpful to present them in aggregate form, treating the region as a unit. The present volume, dealing with Eastern and Southern Europe, covers an area of diverse and uneven birth statistics. In some cases they are as good as those of Western and Northern Europe, in others they are more or less unsatisfactory, and in still others there are no birth statistics at all. This area comprises a few countries like Austria, Estonia, and Latvia where fertility is as low as in Western and Northern Europe, but it also comprises numerous countries with a much higher, and one country at least, Russia, with an exceedingly high, fertility. It, therefore, becomes necessary to subdivide the area into a number of sections, each of which will be discussed in a separate chapter. Those sections have been constituted as follows:

1. Eastern Europe: Russia
2. Southeastern Europe: Albania, Bulgaria, Greece, Yugoslavia, Rumania, Turkey, Maltese Islands
3. Central Europe: Austria, Czechoslovakia, Hungary, Poland, Estonia, Latvia, Lithuania, Danzig, Liechtenstein
4. Southwestern Europe: Italy, Portugal, Spain, Andorra, Gibraltar, Monaco, San Marino.

The following table aims to classify birth statistics in these countries according to completeness:

## STATUS OF BIRTH STATISTICS IN EASTERN AND SOUTHERN EUROPE

East	Southeast	Central	Southwest
1. Pre-war			
Ib Russia proper	I Bulgaria I Rumania I Serbia Ib Maltese Islands II Bosnia-Hercegovina III Albania III Greece III Montenegro III Turkey	Ia Austria Ia Hungary Ib Poland III Liechtenstein	I Italy Ib Portugal Ib Spain I Monaco II Gibraltar III Andorra III San Marino
2. Post-war			
I Russia	Ia Bulgaria I Rumania I Maltese Islands II Albania II Greece III Turkey III Yugoslavia	Ia Austria Ia Czechoslovakia Ia Danzig Ia Hungary I Estonia I Latvia I Lithuania Ib Poland III Liechtenstein	I Italy I Portugal I Spain I Monaco II Gibraltar III Andorra III San Marino

*I*: includes those countries where birth statistics cover at least 90 per cent of all births. Where there was sufficient evidence for a further subdivision, we have indicated by

*Ia*: those countries where, as in all countries of Western and Northern Europe, birth statistics are practically complete or comprise, let us say, 97 per cent or more, of all births;

*Ib*: those countries where, as in the United States Birth Registration Area as a whole, birth statistics comprise at

least 90 per cent of all births but probably less than 97 per cent.

*II*: designates those countries where birth statistics probably comprise less than 90 per cent of all births.

*III*: designates those countries which have no current birth statistics whatsoever.<sup>1</sup>

The following conclusions may be drawn from this table:

1. In *Eastern Europe*, birth statistics before the war were about as nearly complete as they are now in the United States. They have probably become fuller since 1923.

2. In most of *Southeastern Europe*, birth statistics before the war were quite satisfactory. They were practically complete in the territories since ceded by Hungary to Rumania and Yugoslavia; in some other countries, Bulgaria, Rumania, and Serbia, they were at least as complete as they are today in the United States. They were deficient or altogether lacking only in some smaller territories: Albania, Bosnia-Hercegovina, Greece, Montenegro, European Turkey.

Conditions, however, have deteriorated much since the World War. Yugoslavia has published no comprehensive birth statistics whatsoever: Croatia-Slavonia (and other territories formerly belonging to Hungary), which had practically complete birth statistics; Serbia, which had fairly complete birth statistics; and Bosnia-Hercegovina, which had at least some birth statistics, although defective, have now joined the class of Montenegro, which has never bothered, before or since the war, with compiling birth records. Moreover, Rumania, with her fairly complete birth statistics, has taken no census since 1912, so that the value of her birth statistics has depreciated. This depre-

<sup>1</sup> We are not here giving consideration to local birth statistics published by individual cities.

ciation is noticeable particularly for Transylvania which, while part of Hungary before the war, had more complete birth and population statistics than Rumania. Progress, on the other hand, is to be noted, for Bulgaria has probably slightly improved her birth statistics while Albania and Greece, quite without birth statistics before the war, now have them, although their quality leaves much to be desired.

3. In *Central Europe*, birth statistics before the war were practically complete with the exception of those parts of Poland and the Baltic States which belonged to Russia, where they were about as complete as they are today in the United States. Conditions have slightly improved since the World War.

4. In *Southwestern Europe*, birth statistics before the World War were fairly complete and have continued to be so down to the present.

The reader will find a more detailed statement as to the status of the birth statistics of the various countries in Appendix A, pages 67-123. He will there also find those birth statistics which probably comprise less than 90 per cent of all births, as well as data for the areas with less than 300,000 inhabitants, while the more complete birth statistics for the larger countries are included in the general tables on pages 134-137. The methods applied to the computation of reproduction are fully discussed in a separate volume;<sup>2</sup> but care has been taken to explain in this book the meaning of each term so that the reader who is not particularly interested in methodological questions need not consult the other volume.

Some conclusions from the results of our study will be drawn in Chapter VI. At this place it may suffice to present

<sup>2</sup> Kuczynski, R. R., *Fertility and Reproduction: Methods of Measuring the Balance of Births and Deaths*.

a few general data for 1929, which, especially as regards Southeastern Europe, must be taken with due reserve.

POPULATION, BIRTHS, AND DEATHS IN THE  
UNITED STATES AND EUROPE, 1929  
(In Millions)

Territory	Mean Population	Births	Deaths
United States.....	121.5	2.43	1.46
Europe:			
West and North.....	191.1	3.42	2.68
East*.....	119.9	5.04	2.2
Southeast.....	46	1.5	0.9
Central.....	66.2	1.77	1.09
Southwest .....	70.6	1.90	1.19

\* Year 1928. Mean population 1929: 122.3 millions.

*Eastern Europe* has a population two-thirds that of Western and Northern Europe, but one and one-half times as many births and only four-fifths as many deaths.

*Southeastern, Central, and Southwestern Europe* combined have about the same population as Western and Northern Europe, but one and one-half times as many births and one and one-fifth times as many deaths.

*Eastern Europe* has about the same population as the United States, but twice as many births and one and one-half times as many deaths.

*Southeastern, Central, and Southwestern Europe* combined have one and one-half times the population of the United States, but more than twice as many births and deaths.

## CHAPTER II

### EASTERN EUROPE

European Russia comprises almost one-half of the area and one-fourth of the population of Europe. Since, moreover, her demographic conditions differ considerably from those of her neighbors, we shall include no other country in Eastern Europe.

#### RUSSIA

During the nineteenth century and up to the World War, the birth rate of Russia was extraordinarily high. According to the statistics for 1801-1866 covering the Greek-Orthodox population of the whole Empire, the rate was lower than 40 per 1,000 in the war years 1813 and 1814 only, and it averaged 47.7 for the entire period. According to the statistics for 1867-1913 covering the entire population of European Russia proper, that is excluding Finland, Poland, and the Caucasus, the rate never was lower than 43 and averaged 48.9 for the entire period. In Finland the rate was considerably lower,<sup>1</sup> and in Poland slightly lower,<sup>2</sup> while the data for the Caucasus are too inadequate<sup>3</sup> to permit a judgment. But it is safe to say that the birth rate for European Russia as a whole did not materially differ from that for European Russia proper.

<sup>1</sup> See Vol. I, pp. 6-7, 96-97.

<sup>2</sup> See p. 90.

<sup>3</sup> See p. 101.

The fertility of the women in Russia was indeed exceptional. In 1896-1897, the total fertility, that is the total number of children born to 1,000 women arriving at the age of child-bearing, assuming that none of those women died before having passed through child-bearing age, was about 7,060. The average number of children born to each woman (married or unmarried) who passed through child-bearing age was thus seven, which is more than the author has been able to ascertain for any period for any other country of Europe.<sup>4</sup> The gross reproduction rate, which comprises the girls only, was 3.44. The next highest rate found in Europe was 3.24 for Bulgaria (1901-1905). Mortality, however, was also very high. The mean length of life in 1896-1897 was only 31.3 years for men and 33.4 years for women.<sup>5</sup> Not more than 542 out of 1,000 newly born girls reached the age of fifteen years and only 387 survived the age of fifty. The average number of children born to each newly born girl was then only 3.39. The net reproduction rate, that is the average number of girls born to each newly born girl, was 1.65, which is less than the net reproduction of Bulgaria in 1901-1905 (1.88) and 1906-1910 (1.76).

Fertility, of course, was not uniform over such a vast area. The average birth rate of the provinces of European Russia proper did in fact vary:<sup>6</sup>

in 1867-1870	between 30.5 and 58.6
in 1901-1905	between 26.3 and 61.6
in 1906-1910	between 21.9 and 62.7
in 1911-1913	between 19.5 and 55.8

<sup>4</sup> We found a figure of 10 or 12 for French Canada in 1665-1667, but this country had then only about 600 women of child-bearing age. See Kuczynski, R. R., *Birth Registration and Birth Statistics in Canada*, pp. 201, 204.

<sup>5</sup> See Académie des Sciences d'Ukraine, *Travaux de l'Institut démographique*, Vol. V, Ptoukha, M., *Mortalité en Russie et en Ukraine*, p. 186.

<sup>6</sup> See table, p. 10.



## 10 THE BALANCE OF BIRTHS AND DEATHS

BIRTH RATES IN THE 50 PROVINCES OF EUROPEAN RUSSIA PROPER,  
1867-1913\*

No	Provinces	1867-1870	1901-1905	1906-1910	1911-1913
1	Courland	30 5	26 3	21 9	19 5
2	Liefland	33 4	27 0	23 4	24 4
3	Estland	31 6	28 8	26 4	25 5
4	St Petersburg	36 5	35 9	32 4	27 8
5	Kovno	38 1	32 7	29 4	28 5
6	Grodno	46 3	38 4	33 3	31 9
7	Vilno	46 1	35 8	32 2	32 0
8	Vitebsk	47 1	38 1	35 9	35 2
9	Podolia	47 4	41 7	39 9	36 5
10	Moscow	47 9	45 7	43 9	36 7
11	Volhynia	48 3	43 8	40 9	37 8
12	Minsk	47 5	43 9	39 9	38 6
13	Poltava	50 0	41 8	39 4	38 8
14	Kiev	50 0	44 1	41 4	39 1
15	Astrakhan	58 6	37 7	38 9	39 7
16	Chernigov	51 0	44 7	39 8	39 9
17	Bessarabia	40 8	42 7	43 2	41 1
18	Mogulev	50 7	44 7	40 5	41 2
19	Novgorod	38 4	41 4	40 1	42 6
20	Kherson	43 8	43 7	41 0	42 9
21	Yaroslav	41 1	42 6	41 6	43 6
22	Pskov	47 9	44 2	42 4	43 7
23	Tver	45 6	49 4	44 1	43 8
24	Arkhangelsk	37 1	42 4	43 7	44 9
25	Tauride	51 8	41 9	47 5	45 0
26	Vologda	45 8	44 6	45 1	45 1
27	Kostroma	45 7	47 9	46 2	45 6
28	Kazan	45 7	48 0	46 1	45 7
29	Vladimir	51 0	52 2	47 7	45 7
30	Kharkov	47 9	47 8	45 3	45 8
31	Nizhni-Novgorod	51 6	53 1	50 3	46 9
32	Brjansk	52 2	52 7	48 8	47 3
33	Don Territory	51 5	53 2	47 9	47 4
34	Kursk	53 9	51 1	46 4	47 6
35	Orlov	55 7	53 4	48 6	47 6
36	Olonetz	44 4	45 8	45 9	47 8
37	Tambov	49 4	53 8	51 1	47 8
38	Ufa	50 5	52 3	53 3	48 7
39	Saratov	49 7	54 7	50 6	49 0
40	Tula	53 9	53 9	48 4	49 2
41	Simbirsk	51 2	54 4	53 6	49 3
42	Viatka	53 7	53 4	52 6	50 1
43	Smolensk	52 3	53 0	48 9	50 3
44	Kaluga	46 2	56 4	48 3	50 4
45	Penza	54 1	55 6	55 3	50 7
46	Voronezh	51 4	57 7	53 3	51 7
47	Ekaterinoslav	51 9	54 3	54 3	51 7
48	Orenburg	57 8	61 6	62 7	53 8
49	Perm	56 5	55 4	56 7	54 9
50	Samara	56 6	58 4	56 4	55 8
	European Russia	48 8	47 7	45 3	43 8

\* See Lubny-Geitsyk L. I. *Dvizhenie Naseleniya na Territorii SSSR za Vremya Mirnoy Voiny i Revolyutsii* (Movement of Population on the Territory of the USSR during the World War and the Revolution) Moscow 1926, p. 10

While, in view of a certain inadequacy in both the birth and the population data,<sup>7</sup> not too much stress should be laid on each individual rate,<sup>8</sup> the variations are so enormous that the differences between the actual rates must indeed have been very great.

It should, however, be remembered that the difference between the actual birth rates of different territories does not convey a true picture of the difference between the actual fertility of the women of those territories. In European Russia proper (50 provinces), the birth rate in 1896-1897 was 50.1, the total fertility (which eliminates the differences in the age composition) was about 7,060, and the gross reproduction rate (which in addition eliminates the births of males) was 3.44. In the Ukraine, which comprised 22.6 per cent of the total population of European Russia proper,<sup>9</sup> the birth rate was 50.2 or practically the same as for the entire country, but the total fertility was about 7,500 and the gross reproduction rate was 3.65. The reason that there was no noticeable difference in the birth rates in spite of a great difference in actual fertility was that the women between 20 and 45 years of age constituted only 16.1 per cent of the population of the Ukraine as against 17.2 per cent in the whole country.

The high fertility in the Ukraine is the more noteworthy as mortality was much lower than in the country as a whole. The net reproduction rate of the Ukraine—1.96 in 1896-1897—therefore considerably exceeded the net reproduction rate of the entire country (1.65) and was higher than that observed for any other country of Europe.

<sup>7</sup> See pp. 96-102.

<sup>9</sup> The Ukraine, as understood here, comprises the provinces of Ekaterinoslav, Kiev, Podolia, Poltava, Kharkov, Kherson, 11 districts of Chernigov, 3 districts of Tauride, part of Volhynia, and part of the Don territory.

Fertility on the other hand was exceptionally low in the Baltic provinces (Courland, Liefland, and Estland). The birth rate itself, in 1896-1897, was not higher than 28.7; but the difference in actual fertility between the Baltic provinces and, for instance, the Ukraine was considerably larger than the difference between the birth rates. The total fertility in the Baltic provinces was indeed only about 3,800, and the gross reproduction rate only 1.85, or only half as high as in the Ukraine. The reason that the difference in the birth rates was much smaller is that the women between 20 and 45 years of age constituted 18.7 per cent of the population in the Baltic provinces as against 16.1 per cent in the Ukraine.

REPRODUCTION RATES AND FEMALE SURVIVORS IN EUROPEAN RUSSIA,  
1896-1897

Territory	Reproduction Rate			Females Surviving of 1,000 Live-born		Average Years Lived between 15 and 50 Years
	Gross	Net	Ratio (Gross Rate = 100)	15 Years	50 Years	
50 Provinces	3.44	1.65	47	542	387	16.54
Ukraine . . . .	3.65	1.96	53	612	430	18.54
Baltic Provinces.	1.85	1.15	62	678	545*	21.6

\* Estimated.

The *gross* reproduction rate in the Baltic provinces (1.85) was lower than the *net* reproduction rate in the Ukraine. If of a thousand girls born in the Baltic provinces none had died before the age of 50 years, they still would have had fewer daughters than 1,000 girls in the

Ukraine subject to the mortality of that country. If, on the other hand, mortality had been the same in the Baltic provinces as in the Ukraine, the mothers in the Baltic provinces would not quite have reproduced themselves, and if mortality in the Baltic provinces had been the same as in European Russia proper (including the Ukraine and the Baltic provinces) the net reproduction rate would even have been far below 1. As a matter of fact, mortality was much more favorable in the Baltic provinces and they had in 1896-1897 a net reproduction rate of about 1.15.

Fertility apparently was very low in the Baltic provinces as far back as the sixties of the nineteenth century. At that time (1867-1870) all other provinces still had birth rates of over 36. By 1911-1913, however, the birth rate had decreased to 32 or less not only in the three Baltic provinces, but also in the province of St. Petersburg, as well as in three western provinces (Kovno, Grodno, Vilno) since ceded to Poland or Lithuania. These seven provinces, which constituted the northwestern section of European Russia proper and comprised approximately 10 per cent of the population of that country, had in 1911-1913 a combined birth rate of 28.3. This birth rate was about equal to those of Finland, Germany, and Holland, which at that time had the highest birth rates of Western and Northern Europe. The northwestern section of European Russia had then joined the countries of the western civilization in their downward trend of fertility. This section is responsible probably for the entire pre-war decrease in the birth rate of European Russia, and in view of the small proportion which it comprised of the total population of European Russia, the decrease of the birth rate in the whole country was small indeed. This decrease, moreover, was offset by a decrease in mortality.

BIRTH AND DEATH RATES OF EUROPEAN RUSSIA PROPER,  
1867-1913

Period	Birth Rate	Death Rate
1867-1870	49 7	37 4
1871-1875	51 2	37 1
1876-1880	49 5	35 7
1881-1885	50 7	36 5
1886-1890	50 2	34 6
1891-1895	48 9	36 2
1896-1900	49 5	32 1
1901-1905	47 7	31 0
1906-1910	45 8	29 6
1911-1913	44 4	27 5

It is, therefore, safe to assume that the *net* reproduction rate of European Russia proper was in no way decreasing before the World War, although it may not have been as high in 1911-1913 as in 1896-1897, when fertility was especially high while mortality already had begun its downward course.

After the outbreak of the World War, the birth rate decreased considerably and it remained very low during the civil wars. Statistics for this eight-year period (1915-1922), however, are very scanty, especially so for 1916-1919. According to Kuvshinnikov<sup>9</sup> the number of births in 1915-1917 decreased in the following proportions:

Territory	1913	1914	1915	1916	1917
41 provinces, cities of Moscow and Petrograd <sup>10</sup>	100	101	87		
18 provinces, cities of Moscow and Petrograd	100	102	87	66	
7 provinces, cities of Moscow and Petrograd	100	102	88	69	54

<sup>9</sup> "The Natural Movement of the Population in the RSFSR in the Years 1920-1922," *Vestnik Statistiki*, 1925, Nos 4-6, p. 106.

<sup>10</sup> The name of St Petersburg was changed after the outbreak of the World War to Petrograd, and after the death of Lenin (1924) to Leningrad.

The birth rates in the cities of Petrograd, Moscow, Kiev, and Riga, and in the Kharkov province developed as follows:

BIRTH RATES, 1913-1922

Year	Petrograd <sup>a</sup>	Moscow <sup>b</sup>	Kiev <sup>c</sup>	Riga <sup>d</sup>	Kharkov Province <sup>e</sup>
1913	26 4	32 2	21 3	22 6	46 5
1914	25 0	31 0	18 3	22 6	45 3
1915	22 5	26 9	14 7	18 1	36 1
1916	19 1	22 9	14 5	11 1	29 8
1917	18 7	19 6	18 0	9 9	27 0
1918	17 3	14 8	21 7	9 0	36 2
1919	13 7	17 4	21 2	11 1	34 7
1920	21 8	21 4	10 7	13 7	27 6
1921	34 4	30 7	15 5	16 9	31 6
1922	25 3	25 6	15 4	16 7	33 7

<sup>a</sup> See *Leningrad Statisticheskii Spravochnik* 1928 pp 4, 24, *Bulleten Leningradskogo Oblastnogo Otdela Statistiki*, No 23, 1929 p 14

<sup>b</sup> See *Annuaire Statistique de la ville et du gouvernement de Moscou*, No 2, *Donnees Statistiques de la ville de Moscou* 1914-1925 p 88

<sup>c</sup> See Kagan S., *Die Bevolkerung der Stadt Kiew wahrend der Jahre 1917-1926*, *Archiv fur Soziale Hygiene und Demographie* New Series Vol IV 1929, p 124

<sup>d</sup> See *Statistisches Jahrbuch der Stadt Riga* (German) 1920-1922 p 30, *ibid* Vol III, 1925-1926 pp 1, 14 Riga from 1918 on was the capital of the Republic of Latvia

<sup>e</sup> For 1913-1914 see *Académie des Sciences Ukrainienne, Travaux de l'Institut démographique*, Vol IV, *Recueil Démographique*, p 52, for 1915-1922 see *Lubny-Gertsyk, L I Dozhenie Naseleniia na Territorii SSSR za Vremia mirovoi Voiny i Revoliutsii*, p 97

In 1920-1922, eighteen provinces of the European part of the RSFSR showed the following birth rates:<sup>21</sup>

Years	Births	Birth Rate
1920	827,745	30 9
1921	845,787	32 6
1922	917,895	33 4

The low level of the birth rate still prevailing in 1920-1922 may be seen from the following table:<sup>22</sup>

<sup>21</sup> See Kuvshinnikov, p 105 The 18 provinces included are those given in footnotes <sup>23</sup> and <sup>24</sup> excluding the city of Moscow, but including the province of Ekaterinburg

<sup>22</sup> Computed from table in Appendix, pp 107-108

	14 Provinces <sup>13</sup>			17 Provinces <sup>14</sup>	
	1911-1913	1920-1922	1923	1920-1922	1923
Population	26,762,800	22,948,400	25,124,400	25,370,900	27,688,800
Births ..	1,209,286	728,376	1,032,377	821,634	1,152,255
Birth rates	45.2	31.7	41.1	32.4	41.6

In 14 provinces, the birth rate in 1920-1922 was only 31.7, as compared with 45.2 in 1911-1913 and 41.1 in 1923. From 1923 on, the birth rate was indeed very high again. It increased for two years more and reached a new peak in 1925, the birth rate in that year being approximately the same as before the war. But the rate decreased noticeably in the following years.

#### POPULATION, BIRTHS, AND BIRTH RATES IN EUROPEAN RUSSIA

Territory	1911-1913	1923	1924	1925	1926	1927	1928
Population (in thousands)							
(a)	105,482.9	93,144.4	95,456.2	96,957.8	98,852.4	101,150.0	103,252.9
(b)	109,292.7		101,721.0	103,421.1	105,530.0	108,039.3	110,367.2
(c)				111,330.1	113,284.0	116,509.1	119,074.9
Births							
(a)	4,707,740	3,615,260	4,047,660	4,281,048	4,250,283	4,701,207	4,266,980
(b)	4,916,990		4,365,114	4,623,684	4,621,799	4,570,252	4,659,856
(c)				4,822,879	4,954,440	5,032,954	4,999,377
Birth Rates							
(a)	44.6	38.8	42.4	44.2	43.0	42.5	41.3
(b)	45.0		42.9	44.7	43.8	43.2	42.2
(c)				44.2	43.7	43.2	42.0

(a) Excluding Ural Area, North Caucasus, and Daghestan (b) Excluding North Caucasus and Daghestan (c) Excluding Daghestan.

<sup>13</sup> Arkhangelsk, Novgorod, Pskov, Smolensk, Vladimir, Kaluga, Kostroma, Moscow, Nizhni-Novgorod, Tver, Yaroslavl, Tula, Tartar ASSR, Saratov

<sup>14</sup> Same as <sup>13</sup> but also North Dvina, Biarsk, Chuvash Autonomous Area.

Since the decrease was the most strongly marked in the Ukraine and since the recent statistics of this republic are particularly abundant, we shall first study the trend of reproduction in that section of the USSR.

The birth rate of the Ukraine had been extraordinarily high in the nineties of the nineteenth century, when it averaged 49.1;<sup>15</sup> but it dropped to 44.6 in 1901-1910 and to 42.9 in 1911-1913.<sup>16</sup> Since, however, the death rate at the same time dropped from 29.9 to 26.4 and 22.9, the *net* reproduction rate in 1911-1913 was possibly still as high as in 1896-1897 (1.96).

The Ukraine suffered particularly in the latter part of the World War and during the civil wars. The birth rate, therefore, was still particularly low in 1920-1922. While the birth rate in 18 provinces of the European part of the RSFSR amounted in those three years to 30.9, 32.6, and 33.4, an investigation carried on by the Ukrainian People's Commissariat for Health, which covered 50,610 farms with 1.2 per cent of the total population of the Ukraine, showed birth rates of 22.0, 28.4 and 27.7 only.<sup>17</sup>

The turning point may be seen from the following table showing quarterly birth rates in the five largest cities:<sup>18</sup>

Year	1st quarter	2nd quarter	3d quarter	4th quarter
1922 .....	14.8	12.8	16.4	14.8
1923 .....	21.6	31.9	33.2	28.1
1924 .....	30.1	30.0	32.6	31.2

<sup>15</sup> See *Statistika Ukraïni* (Series I), No. 106, p. XIV; see also p. 11 above.

<sup>16</sup> See *ibid.* The divergency from the rate shown in Appendix, p. 109, is due to the fact that we consider here the present territory of the Ukraine.

<sup>17</sup> See League of Nations, Health Organisation, Tomiline, S. A., *L'Hygiène publique dans la population rurale de l'Ukraïne*, p. 17.

<sup>18</sup> See *Statistika Ukraïni* (Series I), No. 70, pp. xv-xvi; Roesle, E., "Die Bewegung der Bevölkerung in der Ukraine vor und nach dem Weltkrieg," *Archiv für Soziale Hygiene und Demographie*, New Series, Vol. I, 1925-1926, p. 431.



In 1923, the birth rate for the whole country according to the official statistics was 35.4, and actually was even higher since the statistics then were still incomplete. By 1925 it was, as in the whole European part of the USSR, as high as in 1911-1913, but it dropped from 42.7 in that year to 34.2 in 1929.

BIRTH AND DEATH RATES IN THE UKRAINE, 1924-1929

Years	Birth Rate	Death Rate
1924.....	42.5	18.0
1925.....	42.7	19.2
1926.....	42.1	18.1
1927.....	40.3	17.8
1928.....	38.1	16.6
1929.....	34.2	17.2

FERTILITY RATES BY QUINQUENNIAL AGE GROUPS IN THE UKRAINE, 1926-1927

15 to 19 Years	20 to 24 Years	25 to 29 Years	30 to 34 Years	35 to 39 Years	40 to 44 Years	45 to 49 Years	Total Fertility
43.1	237.7	258.7	223.5	157.2	82.3	24.4	5,134.6

It would, moreover, be a mistake to assume that fertility in any post-war year actually approached the pre-war level. That the birth rate in 1925 was again as high as in 1911-1913 is rather due to the fact that the proportion of young women had considerably increased. The females between 20 and 45 years constituted indeed 18.1 per cent of the total population in 1926 as against 16.1 per cent in 1897. While the birth rate in 1926-1927 was still 41.2 as compared with 50.2 in 1896-1897, the average number of children born to each female who passed through child-bearing age had dropped from 7.5 to 5.1 and the gross reproduction rate from 3.65 to 2.49.

Mortality likewise had decreased considerably but by no means as much as the drop of the (crude) death rate from 27.8 in 1896-1897 to 17.9 would indicate. The mean expectation of life for both sexes increased in the same period from 36 to 47 years,<sup>10</sup> and the average number of years lived in child-bearing age by a newly born girl increased from 18.54 to 23.22 years.

The net reproduction rate, thus, decreased likewise, although not as strongly as the gross reproduction rate. It was 1.68 in 1926-1927 as against 1.96 in 1896-1897 (and possibly still 1.96 in 1911-1913).

The gross reproduction rate in 1926-1927 was 2.49 as compared with about 2.61 in 1925. It dropped to about 2.24 in 1928 and to about 1.98 in 1929! The gross reproduction rate in 1929 was hardly higher than the *net* reproduction rate in 1896-1897. If of a thousand girls born in 1929 none died before the age of 50 years, they would still have no more children than 1,000 girls born in 1896-1897 and subject to the mortality of that period.

Since mortality decreased considerably in 1928, the net reproduction rate of that year was about 1.63; that is, not much lower than in 1926-1927. But mortality rose in 1929 and the net reproduction rate then was about 1.39.

<sup>10</sup> According to the 1896-1897 life table computed by Ptoukha, the mean expectation of life at birth was 35.88 years for men and 36.85 years for women. See *Mortalité en Russie et en Ukraine*, p. 188.

According to the abridged 1926-1927 life table computed by the same author, the mean expectation of life was 43.73 years for men and 47.50 years for women. See Ptoukha, M., *La Population de l'Ukraine jusqu'en 1960* (French), Report submitted to the 1930 Session of the International Statistical Institute, pp. 26-27.

In the meantime, complete life tables have been computed for 1926-1927, which show 48.82 years to be the mean expectation of life for women. We are using throughout this book the complete table for women, which Ptoukha kindly sent us in manuscript form.

The net reproduction rate of the Ukraine in 1896-1897 (1.96) had been higher than any rate ever observed for any other country. The net reproduction rate of 1926-1927 (1.68) was higher than that ever observed for any country of Western and Northern Europe, but it was lower than in Bulgaria in the first decade of this century (1.82). The net reproduction rate of 1929 (1.39) was lower than in some countries of Western and Northern Europe in the first decade of this century (Denmark 1.50, Germany 1.48, Finland 1.43).

**REPRODUCTION RATES AND FEMALE SURVIVORS IN THE UKRAINE,  
1926-1929**

Years	Reproduction Rate			Females Surviving of 1,000 Live-born		Average Years Lived between 15 and 50 Years
	Gross	Net	Ratio (Gross Rate = 100)	15 Years	50 Years	
1926-1927	2.485	1.676	67	734	583	23.22
1928	2.24	1.63	73	...	...	.....
1929	1.98	1.39	70	...	...	.....

The following table shows the birth rate, the death rate, and the rate of increase (1) of the actual female population in 1926-1927, (2) of the stationary female population according to the life table of 1926-1927, (3) of the stable female population<sup>20</sup> as it would ultimately result from fertility and mortality of 1926-1927:

Females	Birth Rate	Death Rate	Increase Rate
Actual Population .....	38.77	16.46	22.31
Stationary Population .....	34.32	20.48	13.84
Stable Population .....	35.25	17.74	17.51

<sup>20</sup> Length of generation 29.48 years.

The crude birth rate of the European part of the RSFSR in 1926-1927 was 44.5 as against 41.2 in the Ukraine. The gross reproduction rate of European RSFSR in 1926-1927 was about 2.72 as against 2.49 in the Ukraine. But the plus in the gross reproduction of European RSFSR was probably entirely offset by the difference in mortality,<sup>21</sup> so that the net reproduction rate in European RSFSR was probably not higher than in the Ukraine (1.68). In 1928, mortality apparently decreased much more than fertility so that the net reproduction rate very likely exceeded 1.7.

In White Russia, the trend of the birth rate was similar to that in the Ukraine and the European RSFSR. The rate reached its peak in 1925, when it was 41.8 and dropped to 40.7, 38.6, and 36.4 in the following three years. It was on the whole lower than in the two other republics. But mortality also was comparatively low in White Russia.<sup>22</sup>

We thus reach the following conclusion:

Fertility has decreased in European Russia in the course of the last generation. The gross reproduction rate in 1926-1927 was 2.6 as against 3.4 in 1896-1897 and perhaps 3.0 in 1911-1913. But mortality has decreased as much. The net reproduction rate which had been 1.65 in 1896-1897 was approximately 1.7 in 1926-1927.

Fertility decreased further in 1928, but so did mortality. It remains to be seen whether the downward trend of the

<sup>21</sup> According to the abridged 1926 life-tables published by Lubny-Gertsyk and Ovchinsky (see "Summary tables of mortality of the population of the European part of the USSR," Russian, *Statistical Review*, January 1929, p. 96), the average number of years lived between 18 and 48 years by a newly born girl was 18.95 in the European part of the RSFSR and 19.82 years in the Ukraine. In 1927, mortality seems to have increased in European RSFSR, contrary to what happened in the Ukraine.

<sup>22</sup> According to the abridged 1926 life tables of Lubny-Gertsyk and Ovchinsky (p. 96), the average number of years lived between 18 and 48 years by a newly born girl was 21.65 years in White Russia.

net reproduction rate which clearly appears in the 1929 figures of the Ukraine will also be noticed in European Russia as a whole.

A characteristic feature of the pre-war trend of the Russian birth rate was the increasing divergency of the rates of the various provinces. In 1911-1913, the minimum rate was as low as 19.5 against a maximum of 55.8. Such divergencies seem not to exist in present Russia, the minimum in 1926 being 32.2, the maximum 57.1. This change, however, is almost entirely due to the cession by Russia of the Baltic and some Polish provinces. By losing those provinces which long ago had joined the countries of the western civilization in their downward trend of fertility, Russia became demographically more homogeneous.

This is especially true of the European RSFSR where in 1928 the birth rate was 43.8 as compared with 38.0 in the Ukraine and 36.4 in White Russia. The only administrative divisions of the European RSFSR which in that year had a lower birth rate than 39 were the small Crimean SSR (34.2), which actually is separated by the Ukraine from the rest of the RSFSR; the Leningrad Area (33.4) and the Moscow Area (36.4). It is indeed an important fact to note that as the considerable decrease of the birth rate of European Russia from 1925 to 1928 is largely due to the enormous decrease of the birth rate in the Ukraine and White Russia, the slight decrease of the birth rate in the European RSFSR is due almost entirely to the strong decrease of the birth rate in the Leningrad and Moscow Areas. By excluding those two areas and also the Western Area (adjoining White Russia and the Ukraine), the birth rate of the European RSFSR rather shows an upward trend.

## BIRTH RATES IN EUROPEAN RUSSIA, 1925-1928

Years	Euro- pean RSSR <sup>a</sup>	Ukraine	White Russia	Euro- pean RSFSR <sup>a</sup>	European RSFSR <sup>a</sup> excl. Leningrad Area, Moscow Area	European RSFSR <sup>a</sup> excl. Western, Leningrad, and Moscow Areas
1925	44.2	42.7	41.8	44.9	....	....
1926	43.7	42.1	40.7	44.5	46.0	46.0
1927	43.2	40.3	38.6	44.5	46.3	46.5
1928	42.0	38.0	36.4	43.8	45.8	46.5

<sup>a</sup> Excluding Daghestan.

The recent decrease of fertility seems thus to be confined to a contiguous, densely settled but borderland section of European Russia. This, however, does not imply that there is no differential fertility in that major part which still as a whole maintains a very high fertility. As in pre-war Russia, fertility is nowadays much lower in urban than in rural districts. The table on page 24 gives the corresponding birth rates for 1927. It clearly shows three important results:

1. In every single administrative sub-division, the birth rate was lower in the rural than in the urban localities.
2. The rural birth rate in every single administrative sub-division exceeded 40.
3. The rural birth rate was lower in the Ukraine and in White Russia than in the RSFSR.

The difference between urban and rural fertility is even greater than the birth rates indicate, since the proportion of young women is much larger in the cities. The females between 20 and 45 years thus constituted in the urban districts of the Ukraine 20.9 per cent of the total population against 17.4 per cent only in the rural districts. While the birth rates in 1926-1927 were 30.3 and 43.7 respectively, the gross reproduction rates were 1.53 and 2.77.

## 24 THE BALANCE OF BIRTHS AND DEATHS

BIRTH RATES IN URBAN AND RURAL DISTRICTS OF EUROPEAN SSSR,  
1927\*

Administrative Sub-Division	Urban	Rural	Total
<b>A. RSFSR:</b>			
I. Northeastern Area	36 4	45 5	44 6
II. Leningrad Karelian Area	26 6	40 1	35 4
III. Western Area	29 2	45 6	43 7
IV. Central Industrial Area	31 6	44 3	41 0
V. Central Black Soil Area	25 9	47 4	45 4
VI. Viatka Area	41 3	52 5	51 7
VII. Ural Area	48 0	55 0	53 5
VIII. Bashkir Area	46 2	48 8	48 5
IX. Central Volga Area <sup>a</sup>	36 6	49 2	47 8
X. Lower Volga Area	36 4	44 7	43 2
XI. Cumean Area	28 1	43 8	36 6
XII. Northern Caucasian Area	32 9	45 1	42 7
<b>Total</b>	<b>33 1</b>	<b>46 8</b>	<b>44 2</b>
<b>B. Ukrainian SSR</b>			
I. Forest Lands	28 6	42 9	40 8
II. Western Forest and Steppe	26 8	41 1	38 8
III. Eastern Forest and Steppe	25 8	40 7	38 3
IV. Steppe	27 1	45 9	42 3
V. Dniepr Industrial Sub-Area	30 7	46 8	43 6
VI. Mining Industrial Sub-Area	41 9	45 6	44 0
<b>Total</b>	<b>29 6</b>	<b>42 8</b>	<b>40 3</b>
<b>C. White Russia</b>	<b>30 4</b>	<b>40 3</b>	<b>38 6</b>
<b>Total European SSSR</b>	<b>32 1</b>	<b>45 5</b>	<b>43 0</b>

\* See *Statisticheskii Spravochnik SSSR* 1928, pp 76-79.<sup>a</sup> Excluding the Orenburg district.

Had mortality in the cities been as great as in the rural districts, the urban population in 1926-1927 would hardly have held its own. As matters stand, mortality was much lower in the urban districts,<sup>22</sup> so that the net reproduction rate of the urban population of the Ukraine in 1926-1927 was about 1.14.

<sup>22</sup> See *Statistique de la population de l'Ukraine contemporaine*, Report submitted by the Central Statistical Administration of the Ukraine SSR to the 1929 session of the International Statistical Institute (Ukrainian and French), p 44, Lubny-Gertsyk and Ovchinsky, p. 96.

The low reproduction rate of the urban population is the more noteworthy as fertility in the cities still is steadily decreasing. This is true as well of the Ukraine as of the RSFSR.

URBAN AND RURAL BIRTH RATES IN EUROPEAN RUSSIA,  
1924-1928\*

Territory	1924	1925	1926	1927	1928
RSFSR—Urban.....	35.2	36.1	34.6	33.0	31.0
Rural.....	45.4	47.6	46.4	47.2	46.9
Ukraine—Urban.....	34.7	33.7	31.7	29.6	26.5
Rural.....	44.1	44.6	44.4	42.8	40.7

\* See for RSFSR, Peschansky, V., "Chief items of vital statistics for the European part of the USSR for the year 1927" (Russian), *Statistical Review* 1928, No. 11, p. 89, and *Sovietaki Statistika* No. 23, June 10, 1930 (quoted in *Notiziario Demografico*, Vol. III, No. 14, p. 11); for Ukraine *Statistika Ukraini* (Series I) No. 193, pp. 2-3.

Fertility generally seems to be much lower in the larger than in the smaller cities.<sup>24</sup> The following table shows the trend of the birth rate in the Ukraine according to size of localities:

BIRTH RATES IN THE UKRAINE, 1924-1928

Territory	1924	1925	1926	1927	1928
Four largest cities.....	28.6	27.9	24.9	22.3	19.2
76 other cities.....	35.0	35.0	32.0	29.6	26.4
Villages of urban type.....	38.9	37.7	35.4	33.8	31.5
Other agglomerations of urban type.....	43.3	38.0	42.3	40.9	36.5
Rural population.....	44.1	44.6	44.4	42.8	40.7
Total.....	42.5	42.7	42.1	40.3	37.9

While the gross reproduction rate for the total urban population of the Ukraine in 1926-1927 was 1.53 that for

<sup>24</sup> See as to data for 1926, *Mouvement de la population de l'URSS en 1926*, pp. 36-47.



the four cities with over 200,000 inhabitants (Kiev, Odessa, Kharkov, Dniepropetrovsk) was only 1.01. By 1928 this gross reproduction rate had dropped to about 0.84.

It may be of special interest to examine in this connection conditions in the city of Moscow. The gross reproduction rate in 1926-1927 was here 1.17 and the net reproduction rate 0.86. There was then a considerable genuine deficit.<sup>25</sup> With fertility and mortality as they were in 1926-1927 in Moscow, 100 mothers gave birth to 86 future

<sup>25</sup> It is very doubtful whether the population of Moscow in any prior period reproduced itself. In spite of an age composition which tended to swell the number of births, the birth rate since 1867 has always been smaller than in the country as a whole, and mortality prior to 1923 always was very high. The mean expectation of life of newly born girls at various periods in Moscow and in other parts of Russia may be seen from the following table.

MEAN EXPECTATION OF LIFE OF NEWLY BORN GIRLS IN RUSSIA, 1873-1927<sup>a</sup>

Territory	1873 -1874	1881 -1882	1890 -1891	1896 -1897	1900 -1901	1910 -1911	1923	1925 -1926	1926	1926 -1927
Moscow, city		16 48		26 72	30 79 <sup>b</sup>					53 04
Leningrad, city		20 24	29 57	31 45	33 24	38 20	48 44 <sup>c</sup>			
Odessa, city			35 84 <sup>d</sup>	37 40						56 66
Kiev, city	23 64			32 62						55 80
Four largest Ukrainian cities				37 28 <sup>e</sup>			50 20			
All Ukrainian cities				37 68 <sup>f</sup>						
Ukrainian villages				35 96 <sup>g</sup>						
Ukraine				36 85 <sup>h</sup>			47 44 <sup>i</sup>	46 72	49 03	48 82
White Russia									54 00	
Baltic Provinces		42 71 <sup>j</sup>		44 43						
European RSFSR								46 84		
European Russia				33 41						

<sup>a</sup> Data of 1926-1927 for Ukraine and Moscow computed from life tables furnished in manuscript form by M. Ptoukha and by the Economics and Statistical Section of the Committee for the Economic Plan of the Moscow Division, all data of 1926 taken from Lubry-Gertayk and Ovchinsky, "Summary tables of mortality of the population of the European part of the USSR," *Statistical Review* (Russian), January 1929, p. 96, data of 1895-1898, 1923, 1924, and 1925-1926 for Ukraine taken from *Statistika Ukrainy* (Series I), No. 106, pp. XXVIII-XXIX, LXVII, LXXII, and Central Statistical Office of the RSS of Ukraine, Studies on Population Statistics of the Ukraine, Korshak-Chepurkivsky, G., *Life Tables of the RSS of Ukraine 1925-1926* (Russian), p. 72, all other data taken from Ptoukha, M., *Mortalité en Russie et en Ukraine*, pp. 167, 179-190.

<sup>b</sup> 1901-1902

<sup>c</sup> 1918 25 86, 1920, 26.31.

<sup>d</sup> 1892-1893

<sup>e</sup> 1895-1898

<sup>f</sup> 1895-1898 36 23.

<sup>g</sup> 1924

<sup>h</sup> 1880-1883

mothers only. And fertility in Moscow has decreased since 1926-1927 much more than mortality.<sup>28</sup>

Years	Birth Rate	Death Rate
1925	31.7	13.7
1926	29.8	13.7
1927	25.5	13.5
1928	22.7	12.6
1929	21.7	12.9

From 1928 on, the gross reproduction rate of Moscow was below 1. And yet Moscow had a much higher fertility than the largest cities of the Ukraine.<sup>29</sup>

But Moscow is not Russia and Kiev is not the Ukraine. European Russia in 1926-1928 had the amazingly high net reproduction rate of 1.7 in spite of the fact that Moscow and some other large cities had a net reproduction rate

<sup>28</sup> See *Bulletin Statistique mensuel de la ville de Moscou*, December 1929, p. 7

<sup>29</sup> It may be mentioned incidentally that the number of registered abortions is not particularly large in Moscow, as shown by the following table taken from Peschansky, p. 90:

Cities	Per 1,000 Women of 15 to 49 Years					
	Registered Abortions			Births		
	1925	1926	1927	1925	1926	1927
Moscow.....	25.4	49.9	68.8	96.5	91.2	79.0
Leningrad.....	36.7	43.0	63.0	84.8	84.6	74.0
Yaroslavl.....	53.6	54.5	88.6	126.4	114.4	113.8
Riazan.....	26.9	41.4	49.2	100.3	105.4	107.0
Kostroma.....	43.8	49.8	50.4	106.3	94.7	101.8
Saratov.....	67.5	93.1	....	106.4	102.9	91.5
Rostov.....	49.7	49.3	72.8	....	83.8	79.6
Stalingrad.....	39.9	50.2	53.4	143.0	139.7	131.7

In the Ukraine, the corresponding rates in 1927 according to size of localities were as follows:

	Registered Abortions	Births
Four largest cities.....	55.1	65.1
Other urban localities.....	64.7	87.7
Rural localities.....	28.2	165.7

See Peller, S., "Geburt und Abortus in Russland," *Sozialärztliche Rundschau*, Vienna, December 1930, p. 2.

far below 1. As long as the rural population maintains its great fertility, the trend in the cities is numerically an almost negligible quantity and there is so far no sign of a decrease of fertility in the rural districts while on the other hand mortality still is on the downward path.

## CHAPTER III

### SOUTHEASTERN EUROPE

Southeastern Europe, in the sense in which we use the term in this volume, is composed of the following sovereign states and possessions:

Territories	Population	Date of Census or Estimate
Albania .....	1,003,097	May 25, 1930
Bulgaria .....	5,944,000	Dec. 31, 1930
Greece .....	6,315,000	Dec. 31, 1929
Rumania .....	18,176,757	Dec. 31, 1929
Turkey .....	1,050,000	Dec. 31, 1928
Yugoslavia .....	13,929,988	Mar. 31, 1931
Maltese Islands .....	232,832 <sup>1</sup>	Dec. 31, 1929

Satisfactory birth statistics for pre-war times are available for Bulgaria, Rumania, and parts of Yugoslavia (Serbia as well as Croatia-Slavonia and other territories ceded by Austria and Hungary to Yugoslavia). Since the World War no comprehensive birth statistics are available for Yugoslavia, and the usefulness of the birth statistics of Rumania is impaired by the fact that no census has been taken since 1912.

We shall analyze in this chapter the pre-war statistics of Bulgaria, Rumania, Serbia, and Croatia-Slavonia and the post-war statistics of Bulgaria and Rumania. (For Albania, Bosnia-Hercegovina, Greece, the Maltese Islands, and Turkey, see Appendix A, pp. 67, 78-80, 85-87, 118, 120, 122-123.)

The following two tables show the trend of the birth rates and of the fertility rates by age of mothers:

<sup>1</sup> Civil population only.

**YEARLY BIRTH RATES BY PERIODS IN SOUTHEASTERN EUROPE,  
1862-1929**

Period	Bulgaria	Croatia-Slavonia	Rumania	Serbia
1862-1865.....	....	....	....	44.5
1866-1870.....	....	....	....	45.3
1871-1875.....	....	43.0	35.3 <sup>a</sup>	42.6
1876-1880.....	....	45.3	36.2	38.9
1881-1885.....	....	44.5	42.2	46.8
1886-1890.....	36.3 <sup>b</sup>	44.1	41.2	44.1
1891-1895.....	37.5	42.4	41.2	43.6
1896-1900.....	41.0	40.9	40.5	40.4
1901-1905.....	40.7	40.0	39.6	39.0
1906-1910.....	42.1	39.5	40.6	39.3
1911-1914.....	38.2	36.6	42.9	....
1915-1919.....	26.3	19.6 <sup>c</sup>	40.8 <sup>d</sup>	....
1920-1921.....	40.1	....	36.2	....
1922-1923.....	39.1	....	37.1	....
1924-1925.....	38.3	....	36.2	....
1926-1928.....	34.4	....	34.8	....
1929.....	30.1	....	....	....

<sup>a</sup> 1873-1875 only. <sup>b</sup> 1888-1890 only. <sup>c</sup> 1915-1918 only. <sup>d</sup> 1915 only.

**FERTILITY RATES BY QUINQUENNIAL AGE GROUPS IN SOUTHEASTERN  
EUROPE, 1900-1927**

Period	15 to 19 Years	20 to 24 Years	25 to 29 Years	30 to 34 Years	35 to 39 Years	40 to 44 Years	45 to 49 Years	Total Fertility	Gross Repro- duction Rate
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**Bulgaria**

1901-1905	23.5	288.6	312.2	309.4	204.3	121.0	55.5	6,572.9	3.176
1906-1910	23.5	291.7	307.3	290.1	211.8	124.1	56.1	6,522.3	3.155
1921-1926	35.1	246.4	272.7	208.7	155.4	78.9	35.8	5,161.6	2.502
1926-1927	36.2	225.6	242.6	188.8	131.4	64.0	30.6	4,596.3	2.217

**Croatia-Slavonia**

1900-1901	45.2	250.6	287.9	210.1	58.8	5,530.4	2.683
1902-1907	48.6	252.4	288.5	201.9	58.3	5,482.2	2.698
1908-1913	49.1	233.4	263.9	199.7	48.8	5,164.0	2.518

**Serbia**

1900-1901	81.3 <sup>a</sup>	277.0 <sup>b</sup>	364.8	242.7	137.2	58.1	10.4	5,662.2	2.750
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<sup>a</sup> 15-20 years. <sup>b</sup> 21-24 years.

The following table shows the reproduction rates and the proportion of women passing through child-bearing age:

REPRODUCTION RATES AND FEMALE SURVIVORS IN SOUTHEASTERN EUROPE, 1900-1927

Period	Reproduction Rate			Females Surviving of 1,000 Live-born		Average Years Lived between 15 and 50 Years
	Gross	Net	Ratio (Gross Rate = 100)	15 Years	50 Years	
Bulgaria						
1901-1905	3.176	1.839	58	682	457	19.96
1906-1910	3.155	1.760	56	658	445	19.26
1921-1926	2.502	1.534	61	695	512	21.07
1926-1927	2.217	1.446	65	728	549	22.38
Croatia-Slavonia						
1900-1901	2.683	1.416	53	612	409	17.99
Serbia						
1900-1901	2.750	1.613	59	690	429	19.61

Finally, there appear in the table on page 32 the birth rate, the death rate, and the rate of increase of the actual female population, the rate of increase of the stable female population, and the length of a female generation.

## I. BULGARIA

During the 25-year period preceding the Balkan wars, the birth rate of Bulgaria was very high; it averaged about 41.<sup>2</sup> In 1901-1910, the average number of children

<sup>2</sup> This figure, like all other figures in this section, takes into account an omission in the Mahometan births. See Appendix, pp. 69-70. Some data in this section, therefore, differ slightly from the tables on pages 30-31 and those in Appendix A.

## RATES OF INCREASE IN SOUTHEASTERN EUROPE, 1900-1927

Period	Actual Female Population			Stable Female Population	
	Birth Rate	Death Rate	Increase Rate	Increase Rate	Length of Generation Years
Bulgaria					
1901-1905.....	40.10	22.21	17.90	20.27	30.06
1906-1910.....	41.49	23.75	17.74	18.77	30.12
1921-1926.....	37.51	19.52	17.99	14.51	29.49
1926-1927.....	34.04	18.24	15.80	12.57	29.31
Croatia-Slavonia					
1900-1901.....	38.60	27.01	11.59	11.87	29.32
Serbia					
1900-1901.....	40.31	22.86	17.45	16.99	28.15

born to each woman (married or unmarried) who passed through child-bearing age was 6.6, which is more than the author was able to ascertain for any period for any other country of Europe with the exception of Russia. The gross reproduction rate, which comprises the girls only, was 3.2. Mortality was about the same as in Central Europe and much lower than in Russia. The average number of children born to each newly born girl was therefore very high; it reached 3.76. The net reproduction rate, that is the average number of girls born to each newly born girl, was 1.82. With fertility and mortality as they prevailed in Bulgaria in the first decade of this century, the female population was thus increasing by 82 per cent within a generation.

It is generally believed that fertility increased in Bulgaria in pre-war times.<sup>3</sup> But this belief is based on the

<sup>3</sup> See, for instance, *Mouvement de la population dans le Royaume de Bulgarie en 1912*, Part II, pp. VIII-IX.

trend of the birth rate which for two reasons is not conclusive. First, registration of births, especially to Mahometans, was deficient until 1905; second, the percentage of women of child-bearing age among the total population gradually increased, from 21.2 in 1892 to 22.3 in 1910. According to the official statistics, the birth rate rose from 40.7 in 1901-1905 to 42.1 in 1906-1910. Yet, the gross reproduction rate, based on the official statistics, being 3.176 in the first and 3.155 in the second period, showed rather a decrease. And if we assume—which is a conservative estimate—that 2,000 Mahometan female births have not been reported in the average of the years 1901-1904, the actual gross reproduction rate in 1901-1905 was 3.242 as against 3.155 in 1906-1910.

Since at the same time mortality increased, the decline of the net reproduction rate was still more conspicuous. Reckoned from the official statistics, it decreased from 1.839 in 1901-1905 to 1.760 in 1906-1910. But it actually was in 1901-1905 at least as high as 1.878.

During the Balkan wars, fertility diminished considerably, so that the birth rate in 1913 was only 26, but it increased again in 1914 to 45 and in 1915 was still 40. With the entry of Bulgaria into the World War the birth rate dropped once more, to 21 in 1916 and 17 in 1917. It then rose to 21 in 1918, 33 in 1919, and 40 in 1920.

The birth rate remained at about 40 in the following four years. But it dropped to 37 in 1925-1926, to 33 in 1927-1928, and to 30 in 1929. The fall of the Bulgarian birth rate was then most conspicuous.

Nor does the trend of the birth rate tell the whole story, since the percentage of women of child-bearing age among the total population, which already had increased from 21.2 in 1892 to 22.3 in 1910, rose to 24.8 in 1920 and 25.5 in 1926. The gross reproduction rate, which in 1901-1910



## BIRTH AND DEATH RATES IN BULGARIA, 1896-1929

Period	Birth Rate	Death Rate
1896-1900.....	42.1	23.9
1901-1905.....	41.5	22.5
1906-1910.....	42.1	23.8
1911-1912.....	40.9	21.1
1920-1924.....	39.6	21.3
1925-1926.....	37.2	18.2
1927.....	33.1	20.2
1928.....	32.8	17.5
1929.....	30.1	17.8

had been 3.2, dropped to 2.5 in 1921-1926 and to 2.22 in 1926-1927. Since the female birth rate in 1929 was only 29.2 as against 34.8 in 1926-1927, the gross reproduction rate in 1929 was probably 1.90. It was only about as high as the gross reproduction rate of the Scandinavian countries in the first decade of this century.

Mortality after the World War also decreased, but by no means as much as fertility. The net reproduction rate in 1921-1926 was only 1.53 as against 1.82 in 1901-1910. By 1929 it had dropped to probably 1.29, that is to about the level of the Scandinavian countries in the second decade of this century.

With fertility and mortality as they prevailed in Bulgaria in 1901-1905 the female population was increasing at the rate of 88 per cent within a generation. Since the length of the female generation was 30.1 years, the stable rate of natural increase—that is the yearly rate of increase which would have ultimately resulted from fertility and mortality of 1901-1905, after the age distribution had had time to adjust itself to those conditions—would have been 20.7.

The following table shows the birth rate, the death rate, and the rate of increase of the actual population, the sta-

tionary population (according to the life table), and the stable population (according to fertility and mortality of 1901-1905):<sup>4</sup>

	Birth Rate	Death Rate	Increase Rate
Females			
Actual Population .....	40.10	22.21	17.90
Stationary Population .....	44.13	24.00	20.14
Stable Population .....	42.93	22.66	20.27

The yearly rate of increase of the stable population dropped from 20.7 in 1901-1905 to 18.8 in 1906-1910. In 1921-1926 it was 14.5 and in 1929 only about 8.8.

REPRODUCTION AND NATURAL INCREASE IN BULGARIA, 1901-1929

Period	Gross Repro- duction Rate	Net Repro- duction Rate	Length of Female Generation Years	Rate of Increase per 1000 in Stable Population
1901-1905	3.24	1.88	30.1	20.7
1906-1910	3.16	1.76	30.1	18.8
1921-1926	2.50	1.53	29.5	14.5
1926-1927	2.22	1.45	29.3	12.6
1929	1.90	1.29	....	8.8

The reproduction of the population in Bulgaria has considerably slowed down since the beginning of this century and retardation has been especially strong in recent years. If fertility and mortality remain what they were in 1929, the yearly natural increase will ultimately be about 0.88 per cent and inasmuch as in 1929 mortality was still high, the rate of increase might even noticeably rise without a change in fertility. But if mortality should remain constant and if fertility should decrease for another five years at the rate it has decreased from 1924 to 1929 and not rise again, the population of Bulgaria will hardly hold its own.

<sup>4</sup> Based on official data (incomplete for births).

## II. OTHER COUNTRIES

*Rumania.* During the 25-year period preceding the Balkan wars, the birth rate of Rumania averaged 41 and was as high as that of Bulgaria; but since the percentage of women of child-bearing age was larger in Rumania (1899: 23.8) than in Bulgaria (1900: 21.8), fertility in Rumania was probably somewhat lower. Mortality, moreover, was higher than in Bulgaria.\*

Contrary to what occurred in Bulgaria, Rumania's birth rate was not affected by the Balkan wars. It was, however, exceedingly low during the military occupation in the World War, but it recovered quickly thereafter.

Greater Rumania, which has about double the population of the old kingdom, had a lower birth rate in 1920-1926 than Bulgaria. But since there was only a slight drop of the birth rate in 1927-1928, the birth rate of Greater Rumania in those years was higher than in Bulgaria. Moreover, the decrease of the birth rate in the present kingdom as compared with the former kingdom is almost exclusively due to the annexation of Transylvania, etc., and Bukovina (formerly belonging to Hungary and Austria), which together hold more than one-third of the population of present Rumania.\* The following table shows the trend of the birth rate in the territory of the old kingdom and Bessarabia on the one hand, and in Transylvania, etc., and Bukovina on the other.

\*The average expectation of life for females at birth was 41.68 years in Bulgaria in 1900-1905. It was 37.05 years in Rumania in 1900; see Scărlătescu, I., "Mortalité, survie et la vie moyenne ou l'espérance mathématique de la vie de la population en Roumanie," *Bulletin Statistique de la Roumanie*, Vol. XV, 1922, No. 9, pp. 60-61.

\*For the comparatively low pre-war birth rate of the territories ceded by Hungary, see *Bulletin Statistique de la Roumanie*, Vol. XIV, 1919, No. 1, pp. 85-87, 117, 152.

## BIRTH RATES IN RUMANIA, 1919-1928\*

Period	Old Rumania, Bessarabia			Transylvania, etc., Bukovina			Greater Rumania		
	Popu- lation (in 1000)	Yearly Births	Birth Rate	Popu- lation (in 1000)	Yearly Births	Birth Rate	Popu- lation (in 1000)	Yearly Births	Birth Rate
1919	9,677	365,562	37.8						
1920-1921	10,030	385,326	38.4	6,009	194,584	32.4	16,039	579,910	36.2
1922-1923	10,433	418,241	40.1	6,065	193,003	31.8	16,498	611,244	37.1
1924-1925	10,701	426,066	39.8	6,275	188,052	30.0	16,976	614,118	36.2
1926-1928	11,343	427,984	37.7	6,228	183,685	29.5	17,571	611,669	34.8

\* The population has been estimated on the basis of the data given in *Bulletin Statistique de la Roumanie* 1922, No. 8, pp. 32-33, 1924, No. 1, p. 51, 1929, No. 4, p. 4; *Annuaire Statistique de la Roumanie* 1929, pp. 16, 19; *Transilvania, Banatul Crişana, Maramureşul 1918-1928*, Vol. 1, pp. 668, 673.

For births see *Bulletin Statistique* 1922, No. 8, p. 33; *Annuaire Statistique* 1929, p. 34.

All those data should, however, be considered with great caution since no census has been taken since 1912. If a post-war census were available, it would also be possible to ascertain how far the maintenance of the pre-war birth rate is due to an increase in the proportion of women of child-bearing age.

*Serbia.* The birth rate of Serbia was exceedingly high in the fifty years preceding the Balkan wars. In 1863-1887, it averaged 44; in 1888-1912, it averaged 41 or as high as in Bulgaria and Rumania. But there was a striking difference between the fertility of the women in Serbia and Bulgaria. While the number of births per 1,000 females was the same in Serbia (1900-1901) as in Bulgaria (1901-1905), the general fertility rate, that is the number of births per 1,000 women of child-bearing age, was 173 in Serbia as against 185 in Bulgaria.<sup>7</sup> This difference, to be sure, is not very large. But the fertility of the younger women in Serbia was considerably larger, that of the older women

<sup>7</sup> We do not take account here of the slight deficiency of the birth records in either country.

very much smaller than in Bulgaria. While in Bulgaria there occurred 183 births per 1,000 women of 15-29 years and 187 births per 1,000 women of 30-49 years, there were in Serbia not less than 213 births per 1,000 women of 15-29 and 118 births only per 1,000 women of 30-49 years. As a consequence thereof, total fertility, that is the number of children born to 1,000 women (married or unmarried) passing through child-bearing age, was 5,662 only in Serbia as against 6,573 in Bulgaria, and the gross reproduction rate, that is the average number of girls born to a woman passing through child-bearing age, was 2.75 in Serbia as against 3.18 in Bulgaria.

Mortality was slightly higher in Serbia than in Bulgaria, so that the net reproduction rate was 1.61 for Serbia as against 1.84 in Bulgaria. If then fertility and mortality as they prevailed in the two countries had remained constant, the female population would have increased by 61 per cent in a generation in Serbia as against 84 per cent in Bulgaria. But since the fertility of the younger women in Serbia was considerably higher than in Bulgaria, the length of a generation in Serbia would have been 28.1 years only as against 30.1 years in Bulgaria. The yearly rate of increase of the stable female population of Serbia would therefore have been 17.0 as against 20.3 in Bulgaria. While the increase within a generation of the stable population would be 27 per cent smaller than in Bulgaria, the difference in the yearly rate of increase of the stable population would be 16 per cent only.

Fertility in Serbia seems to have slightly decreased in 1908-1912. According to the scanty information available for post-war times the birth rate was in 1922-1926 on about the same level as in 1908-1912.

*Croatia-Slavonia.* The birth rate of Croatia-Slavonia was as high as that of Serbia in the last three decades of the

nineteenth century. It averaged 43 in that period. It oscillated around 40 in 1901-1909 and averaged 37 in 1910-1914.

In 1900-1901, total fertility, that is the average number of children born to 1,000 women (married or unmarried) passing through child-bearing age, was 5,530, or almost the same as in Serbia (5,662). The gross reproduction rate, that is the average number of girls born to a woman passing through child-bearing age, was 2.68 (2.75). Mortality in 1900-1901 was even higher than in Serbia, so that the net reproduction rate was 1.42 only for Croatia-Slavonia as against 1.61 in Serbia.

The differences between the yearly rates of increase of the stable population were even larger than the net reproduction rates indicate because the length of the female generation was shorter in Serbia (28.1 years) than in Croatia-Slavonia (29.3 years). The stable rate of increase was thus 11.9 in Croatia-Slavonia as against 17.0 in Serbia.

Females	Birth Rate	Death Rate	Increase Rate
Actual Population .....	38.60	27.01	11.59
Stationary Population .....	39.91	28.18	11.73
Stable Population .....	39.43	27.56	11.87

The gross reproduction rate of Croatia-Slavonia dropped from 2.68 in 1900-1901 to 2.52 in 1908-1913. But mortality also decreased slightly.

The number of births was very small during the World War and according to the scanty information available for post-war times the birth rate has not returned to the pre-war level, at least not in 1921-1922.

## CHAPTER IV

### CENTRAL EUROPE

Central Europe, in the sense in which we use the term in this volume, is composed of the following states:

States	Population	Date of Census or Estimate
Austria .....	6,722,395	Dec. 31, 1930
Czechoslovakia .....	14,723,234	Dec. 1, 1930
Hungary .....	8,683,740	Dec. 31, 1930
Poland .....	31,147,616	Dec. 31, 1930
Estonia .....	1,117,397	Dec. 31, 1930
Latvia .....	1,900,045	Feb. 11, 1930
Lithuania .....	2,367,042	Dec. 31, 1930
Danzig .....	407,517	Aug. 18, 1929
Liechtenstein .....	11,500	1921

Satisfactory statistics are available for all those countries with the exception of the little principality of Liechtenstein (see Appendix A, pp. 84-85). We shall analyze in this chapter the statistics of (1) Austria, (2) Czechoslovakia, (3) Hungary, (4) Poland, (5) the Baltic States (Estonia, Latvia, Lithuania). As to the Free City of Danzig with its predominantly urban population, we shall confine ourselves to including it in the birth rate table.

The following two tables show, for Central Europe, the trend of the birth rates and of the fertility rates by age of mothers.

YEARLY BIRTH RATES BY PERIODS IN CENTRAL EUROPE, 1819-1930

Period	Austria* (1)	Period	Austria (1)	Austria (2)	Czechoslovakia			Danish	Estonia	Hun- gary (1)	Hun- gary (2)	Latvia	Lithu- ania	Poland
					West	East	Republic							
1819-1820	43 6	1871-1875	39 3	34 5						43 1				
1821-1825	40 0	1876-1880	38 7	34 0						44 4				
1826-1830	38 0	1881-1885	38 3	32 9						44 4				
1831-1835	38 1	1886-1890	37 8	32 0						43 5				
1836-1840	38 4	1891-1895	37 4	31 7						41 7				
1841-1845	39 6	1896-1900	37 3	31 5						39 4				
1846-1850	37 1	1901-1905	35 7	30 4	33 7	39 2	35 1			37 4				
1851-1855	36 5	1906-1910	33 7	27 8	31 1	37 9	32 9			36 7	34 3			
1856-1860	39 1	1911-1914	30 8 <sup>b</sup>	24 7 <sup>b</sup>	27 4	36 0	29 6			35 1 <sup>a</sup>	20 2			
1861-1865	38 0	1915-1919		16 4 <sup>c</sup>	27 4	32 0 <sup>c</sup>	22 7 <sup>c</sup>	31 7	20 2	18 1 <sup>d</sup>	20 2			
1866-1870	38 4	1920-1923		23 0	25 1	36 1	28 1	27 1	18 8		31 6			
		1924-1925		22 8	24 1	37 6	27 5	26 2	17 8		30 0			
		1926-1928		21 1	22 0	34 8	23 7	23 4	17 1		27 7			
		1929		18 7	20 3	32 8	22 4	23 7	18 8		26 5			
		1930		16 8	19 2	30 7		22 5	17 4		24 8			

(1) Pre-war territory

(2) Present territory

<sup>a</sup> 1819-1855, years ending October 31<sup>b</sup> 1911-1913 only<sup>c</sup> 1919 only<sup>d</sup> 1916-1918 only



# 42 THE BALANCE OF BIRTHS AND DEATHS

## FERTILITY RATES BY QUINQUENNIAL AGE GROUPS IN CENTRAL EUROPE, 1895-1929

Period	15 to 19 Years	20 to 24 Years	25 to 29 Years	30 to 34 Years	35 to 39 Years	40 to 44 Years	45 to 49 Years	Total Fertility	Gross Repro- duction Rate
Austria									
1895-1900	28 4	181 1	265 2		222 4		53 5	5,113 7	2 485
1901-1905	27 4	176 4	260 1		210 4		53 4	4,919 2	2 393
1906-1910	28 4	173 2	244 9		196 6		49 5	4,660 4	2 268
1913	25 5	156 6	218 7		171 5		42 6	4,114 9	1 999
1928	25 1	94 2	105 3	88 1	59 6		14 2	1,999 1	0 989
Czechoslovakia Western Provinces									
1920-1921	16 4	128 0	183 1	143 8	92 1	37 7	4 7	3,028 6	1 463
Czechoslovakia Eastern Provinces									
1920-1921	35 8	223 4	253 6	191 8	158 7	69 8	14 0	4,735 6	2 273
Czechoslovakia Republic									
1920-1921	21 8	153 2	200 3	155 1	107 8	45 2	6 8	3,451 3	1 664
Estonia									
1922-1923	9 4	89 8	138 4	121 1	88 9	41 9	6 3	2,478 6	1 204
Hungary									
1900-1901	56 8	259 0	280 0		197 6		44 7	5 353 8	2 605
1902-1907	56 7	257 9	263 3		183 5		42 4	5,105 2	2 477
1908-1913	59 4	250 3	252 2		177 4		37 9	4,924 6	2 396
1920-1921	43 6	207 3	205 6		126 6		26 9	3,792 7	1 829
Latvia*									
1929	9 7	82 9	126 0	110 7	77 5	29 8	5 9	2,212 1	1 061
Lithuania									
1928	10 1	105 5	211 4	216 0	143 1	59 0	15 2	3,801 5	1 850
Poland Provinces of Poznań and Pomorze									
1921	10 0	124 0	251 3	237 9	195 9	97 7	15 1	4,859 1	2 241
1922	12 1	138 0	252 1	227 4	186 0	92 2	13 9	4,018 3	2 206
1923	11 5	131 8	234 4	222 3	179 1	90 3	13 0	4,412 9	2 121
1924	13 4	123 1	211 1	207 5	162 5	82 9	11 6	4,060 5	1 959
1925	12 4	120 2	212 6	211 3	169 9	86 3	11 7	4,121 7	1 983
1926	12 1	112 9	192 5	196 1	156 3	83 0	11 4	3,821 7	1 853

\*Live- and still-birth rates

The following table shows the reproduction rates and the proportion of women passing through child-bearing age:

REPRODUCTION RATES AND FEMALE SURVIVORS IN CENTRAL EUROPE,  
1895-1929

Period	Reproduction Rate			Females Surviving of 1,000 Live-born		Average Years Lived between 15 and 50 Years
	Gross	Net	Ratio (Gross rate = 100)	15 Years	50 Years	
Austria						
1895-1900	2.485	1.411	57	641	462	19.55
1901-1905	2.393	1.428	60	674	489	20.57
1906-1910	2.266	1.410	62	697	514	21.43
1913	1.999	1.305	65	722	549	22.49
1928	0.969	0.782	81	852	716	27.78
Estonia						
1922-1923	1.204	0.877	73	788	651	25.26
Hungary						
1900-1901	2.605	1.445	55	633	440	18.84
1920-1921	1.829	1.127	62	685	509	20.94
Latvia						
1929	1.061	0.900	85	877	802	29.52
Poland (Provinces of Poznań and Pomorze)						
1921	2.241	1.506	67	742	578	23.36
1922	2.206	1.559	71	769	617	24.54
1923	2.121	1.523	72	777	632	24.95
1924	1.959	1.434	73	790	648	25.43
1925	1.983	1.467	74	793	660	25.72
1926	1.853	1.323	71	773	635	24.85

Finally the following table shows the birth rate, the death rate, and the rate of increase of the actual female population, the rate of increase of the stable female population, and the length of a female generation:

**RATES OF INCREASE IN CENTRAL EUROPE, 1895-1929**

Period	Actual Female Population			Stable Female Population	
	Birth Rate	Death Rate	Increase Rate	Increase Rate	Length of Generation Years
<b>Austria</b>					
1895-1900.....	35.50	24.72	10.78	11.34	30.36
1901-1905.....	34.12	23.45	10.67	11.75	30.30
1906-1910.....	32.19	21.50	10.69	11.38	30.21
1913.....	28.35	19.40	8.95	8.83	30.19
1928.....	16.37	13.46	2.91	-8.36	29.37
<b>Estonia</b>					
1922-1923.....	18.47	14.25	4.23	-4.26	30.80
<b>Hungary</b>					
1900-1901.....	37.34	25.62	11.72	12.78	28.81
1920-1921.....	30.17	20.12	10.05	4.18	28.49
<b>Latvia</b>					
1929.....	17.14	13.51	3.63	-3.43	30.59
<b>Poland</b>					
<b>Provinces of Poznań and Pomorze</b>					
1921.....	29.93	17.80	12.63	13.03	31.44
1922.....	30.37	16.00	14.37	14.27	31.12
1923.....	29.67	14.91	14.76	13.49	31.21
1924.....	28.08	14.40	13.67	11.56	31.18
1925.....	28.82	13.42	15.39	12.23	31.33
1926.....	27.41	14.28	13.13	8.91	31.42

## I. AUSTRIA

During the century preceding the World War, the birth rate of Austria had a trend similar to that of many countries of Western and Northern Europe, although the decrease around 1830 and the increase around 1875 were perhaps less conspicuous than in some other states. From 1819 to 1902 the birth rate averaged 40. A decline was noticeable from the beginning of the nineties on, but became marked only after 1902, the rate falling definitely below 36 in 1903, below 33 in 1910, and below 30 in 1913. In 1913, the absolute number of births was smaller than in any year since 1885.

In conformity with the decrease of the birth rate in the last decade preceding the World War, the average number of children born to a woman (married or unmarried) who passed through child-bearing age dropped from five in 1895-1900 to four in 1913, and the gross reproduction rate (which considers daughters only) decreased from 2.5 in 1895-1900 to 2.4 in 1901-1905, 2.3 in 1906-1910, and 2.0 in 1913. Mortality was higher than in Western and Northern Europe, but shrunk during that period so that the net reproduction rate for some time remained constant. But after having been 1.41 to 1.43 in 1895-1910, it dropped to 1.30 in 1913. The stable rate of increase

BIRTH RATES, DEATH RATES, AND RATES OF INCREASE OF  
ACTUAL, STATIONARY, AND STABLE FEMALE POPULATION  
IN AUSTRIA, 1901-1910

Period	Actual Population			Stationary Population			Stable Population		
	Birth Rate	Death Rate	Increase Rate	Birth Rate	Death Rate	Increase Rate	Birth Rate	Death Rate	Increase Rate
1901-1905	34.12	23.45	10.67	34.80	24.38	10.43	34.66	22.90	11.75
1906-1910	32.19	21.50	10.69	32.92	23.34	9.58	32.98	21.59	11.38

which corresponds to fertility and mortality as they prevailed in 1895-1910, oscillated around 11.5 per 1,000. By 1913 it had shrunk to 8.8.

The World War not only disrupted the political and economic structure of Austria, it upset also her demographic status. Austria lost her most prolific provinces and retained those which in pre-war times already had a very low fertility.

BIRTH RATES IN AUSTRIA, 1871-1913

Period	Pre-War Territory	Present Territory	Vienna
1871-1875	39 3	34 5	40 2
1876-1880	38 7	34 0	40 2
1881-1885	38 3	32 9	36 7
1886-1890	37 8	32 0	33 8
1891-1895	37 4	31 7	33 2
1896-1900	37 3	31 5	32 4
1901-1905	35 7	30 4	29 4
1906-1910	33 7	27.8	24 5
1911-1913	30 8	24 7	19 0

As will be seen from the preceding table, the birth rate in the present territory of Austria was much lower than in the pre-war territory even at a time (1871-1900) when the birth rate of Vienna was higher than in the rest of the present territory. With the exception of the Burgenland, which was ceded by Hungary after the World War, each of the eight provinces of present Austria (excluding Vienna) had in each quinquennial period a lower birth rate than the rest of old Austria. But the difference between the birth rate for the present and the pre-war territory was, of course, accentuated by the collapse of the birth rate of Vienna.

During the World War, the birth rate in present Austria dropped to as low a level as in most other belligerent countries, and it never has reached the pre-war status since. This again cannot be attributed to the further decrease

of the Vienna rate since the rate in most provinces was lower in every post-war year than in 1911-1913, and in all provinces from 1922 on. But the rapid decrease of the Vienna rate accentuated the downward trend for the country as a whole.

The birth rate of present Austria, which still had been 24.1 in 1913, dropped to 16.8 in 1929-1930. At the same time the proportion of women of child-bearing age rose from 26 to 29 per cent. The average number of children born to a woman (married or unmarried) had been 4.1 in 1913 for old Austria and probably not more than 3.2 for present Austria. By 1928 it had dropped to 2. The gross reproduction rate had fallen below 1. Even if none of the girls born in 1928 died before having passed through child-bearing age, the population of Austria would not hold its own.

Mortality has greatly decreased in post-war times. The fall of the net reproduction rate therefore is not quite as conspicuous. This rate was slightly over 1 for present

REPRODUCTION AND NATURAL INCREASE  
(DECREASE) IN AUSTRIA, 1895-1928

Period	Gross Reproduction Rate	Net Reproduction Rate	Length of Female Generation Years	Rate of Increase per 1000 in Stable Population
Pre-war Territory				
1895-1900	2.48	1.41	30.4	11.3
1901-1905	2.39	1.43	30.3	11.8
1906-1910	2.27	1.41	30.2	11.4
1913	2.00	1.30	30.2	8.8
Present Territory				
1928	0.97	0.78	29.4	-8.4

Austria in 1913, but only 0.78 in 1928, or about as low as in England. With fertility and mortality as they prevailed in Austria in 1928, the female population would decrease by 22 per cent within a generation. Since the length of the female generation was 30.4 years, the stable rate of natural decrease—that is the yearly rate of decrease which would ultimately result from fertility and mortality of 1928, after the age distribution had time to adjust itself to those conditions—would be 8.4 per 1,000.

The reproduction of the population in present Austria had been very weak in pre-war times. The balance of births and deaths from 1871 to 1913 was such that the population most of the time just held its own. Mortality has decreased so much, especially since the World War, that the margin for further improvement in the reproductive ages of life is scant. But fertility has decreased at a still more rapid rate. If fertility does not considerably increase, the population of Austria is doomed to die out.

## II. HUNGARY

The birth rate of Hungary was very high from 1871 to 1897 when it averaged 43. In none of those 27 years was it lower than 40. But it never reached 40 again. In the 12 years from 1898 to 1909 it averaged 38, and in the five years from 1910 to 1914, 35. It will be remembered that the birth rate of Croatia-Slavonia, which in pre-war times formed part of Hungary, decreased likewise, but this decrease started later and was not so pronounced as in the rest of the kingdom. The following table shows the birth rate of the kingdom, of Croatia-Slavonia, and of Hungary proper.

## BIRTH RATES IN HUNGARY, 1870-1918

Period	Kingdom	Croatia-Slavonia	Hungary Proper
1870.....	....	....	41.9
1871-1875.....	43.1	43.0	43.1
1876-1880.....	44.4	45.3	44.3
1881-1885.....	44.4	44.5	44.3
1886-1890.....	43.5	44.1	43.4
1891-1895.....	41.7	42.4	41.6
1896-1900.....	39.4	40.9	39.2
1901-1905.....	37.4	40.0	37.0
1906-1910.....	36.7	39.5	36.3
1911-1914.....	35.1	36.6	34.9
1915-1918.....	18.1	19.6	17.9

Since Hungary proper comprised seven-eighths of the population of the kingdom, the demographic condition of the entire country was predominantly determined by conditions in Hungary proper.

In 1900-1901, the average number of children born to a woman (married or unmarried) who passed through child-bearing age was 5.4. The gross reproduction rate was 2.6. But mortality was very high. The expectation of life at birth for females was only 37.57 years. The net reproduction rate therefore was comparatively low; it amounted to 1.45. Fertility decreased in the following years, so that the gross reproduction rate dropped to 2.48 in 1902-1907 and further to 2.40 in 1908-1913. But mortality decreased likewise and the net reproduction rate in 1908-1913 was probably not lower than in 1900-1901.

Fertility was low, of course, during the World War and Hungary through the peace treaty lost some of her more prolific provinces. While in 1911-1914 the birth rate in the former kingdom had been 35.1 and in Hungary proper 34.9, it was only 34.3 in the area covered by present Hungary. Although the proportion of women of child-bearing



In the western provinces, which constitute almost three-fourths of the Czechoslovakian Republic, the trend of the birth rate is similar to that of Western and Northern Europe. The birth rate dropped from 35 in 1901-1902 to 27 in 1913 and never reached the pre-war level again. In 1920-1921, it was 25 and decreased gradually to 19 in 1929.

The gross reproduction rate in 1920-1921 was 1.46. By 1929 it had dropped to about 1.1. Mortality decreased also, but much less than fertility. For several years the population of the western provinces no longer reproduces itself.

In the eastern provinces, the birth rate in 1901-1914 was higher than even in the rest of Hungary. It averaged 39 in 1901-1909 and 36 in 1910-1914. After the World War it rose again to 39 in 1921 and then decreased gradually to 31 in 1929.

The gross reproduction rate in 1920-1921 was 2.27 as against 1.46 in the western provinces. But mortality was much higher in the eastern provinces. In 1929, the gross reproduction rate probably still exceeded 1.8. In the meantime mortality had decreased much more than fertility. The net reproduction rate in 1929 probably was about 1.3.

The reproduction of the population of the western provinces had been rather weak in the last pre-war years and in spite of a considerable reduction in mortality the population now no longer reproduces itself. In the eastern provinces reproduction is still ample in spite of a considerable reduction in fertility. But if mortality in Czechoslovakia should remain constant and if fertility should decrease for a few years more at the rate it has decreased from 1921 to 1929 and not rise again, the population of Czechoslovakia will hardly hold its own.

## IV. POLAND

The birth rate of Poland was very high in the last third of the nineteenth century. But it decreased in the decade before the World War<sup>1</sup> and in 1909-1912 it was about 37.

The birth rate continued its downward path at an accelerated rate during the World War and never returned to the pre-war level. It rose, it is true, to 36 in 1923, but dropped to 32.5 in 1927-1930.

In the two western provinces Poznań and Pomorze, for which statistics are particularly abundant, the average number of children born to a woman (married or unmarried) who passed through child-bearing age dropped from 4.66 in 1921 to 3.82 in 1926, and the gross reproduction rate from 2.24 to 1.85. Mortality decreased sufficiently to offset the decrease of fertility in the first years, so that the net reproduction rate, without any marked trend, averaged 1.50 in 1921-1925, but mortality increased in 1926 and the net reproduction rate fell to 1.32. The stable rate of increase, that is the rate of increase as it

BIRTH RATES, DEATH RATES, AND RATES OF INCREASE OF  
ACTUAL, STATIONARY, AND STABLE FEMALE POPULATION  
IN THE PROVINCES OF POZNAŃ AND POMORZE, 1921-1926

Year	Actual Population			Stationary Population			Stable Population		
	Birth Rate	Death Rate	Increase Rate	Birth Rate	Death Rate	Increase Rate	Birth Rate	Death Rate	Increase Rate
1921	29 93	17 30	12 63	31 61	20 98	10 63	31 51	18 47	13 03
1922	30 37	16 00	14 37	31 00	19 88	11 12	31 12	16 85	14 27
1923	29 67	14 91	14 76	29 49	19 36	10 13	29 89	16 35	13 49
1924	28 08	14 40	13 67	27 29	19 03	8 26	27 71	16 15	11 56
1925	28 82	13 42	15 39	27 28	18 59	8 69	27 79	15 55	12 23
1926	27 41	14 28	13 13	25 44	19 23	6 21	25 92	17 02	8 91

<sup>1</sup> See Szulc, Stefan, "Population de la Pologne d'après l'âge en 1927, 1928 et 1929" *Revue Trimestrielle de Statistique de la République Polonaise*, Vol VII, 1930, Reprint, p 22.

would ultimately result if fertility and mortality remained constant, was 11.6 to 14.3 per 1,000 according to fertility and mortality of 1921-1925, but only 8.9 according to conditions of 1926.

Mortality has decreased since 1926, but fertility has decreased still more, so that the net reproduction rate probably was smaller in 1929 than in 1926.

In the entire republic, the average number of children born to a woman (married or unmarried) who passed through child-bearing age was four according to the fertility of 1927. The gross reproduction rate was about 1.95. Mortality was rather high<sup>3</sup> and the net reproduction rate was only 1.3.

Conditions in Poland are somewhat similar to those in Bulgaria. In both countries the reproduction had been very rapid in pre-war times and has since considerably slowed down. The gross and the net reproduction rates are now practically identical for both countries. The population is still reproducing itself and there is a strong margin for future reduction of mortality. The main difference between the two countries is that Bulgaria, after having recuperated her high pre-war fertility, showed a sudden and most conspicuous drop in recent years while in Poland, which never returned to the pre-war level of its fertility, the development was more gradual. This slow decrease of fertility distinguishes Poland likewise from most other countries of Central Europe.

#### V. BALTIC STATES

The Baltic Provinces of Russia (Courland, Liefland, Estland) had a rather low birth rate as far back as the

<sup>3</sup> According to a life table kindly furnished in manuscript form by Mr. Stefan Szulo, the mean expectation of life at birth was 45.8 years for both sexes combined in 1927.

sixties of the nineteenth century<sup>3</sup> and the birth rate decreased considerably until the World War. In 1896-1897, the gross reproduction rate was 1.85 and the net reproduction rate only 1.15. From 1896-1897 to 1911-1913 the birth rate dropped from 29 to 23. In the latter period, the population very likely did not more than hold its own.

The present Baltic States consist of territories mainly ceded by Russia, partly also by Germany.

*Estonia.* During the five years preceding the World War, the birth rate of Estonia averaged 25. It never regained the pre-war level. It was highest in 1922-1923 when it was 20.2. The gross reproduction rate was then 1.20 and the net reproduction rate 0.88. By 1928 the birth rate had dropped to 18, the gross reproduction rate to 1.1 and the net reproduction rate to 0.8. It was about as low as in Austria and England, and the rate of decrease of the stable population would have amounted to 8 per 1,000. In 1929, the net reproduction rate fell to about 0.66, but this was an exceptional year in which even the absolute number of births lagged behind the absolute number of deaths, and in 1930 the net reproduction rate was slightly higher than in 1928.

The gross reproduction rate of Estonia for a number of years hardly exceeded 1. If, therefore, fertility remains constant the population cannot hold its own even if mortality should further decrease.

*Latvia.* Latvia lost proportionately more population through the World War than any other country of the world. The number of inhabitants which had increased from 1,929,000 in 1897 to 2,552,000 in 1914<sup>4</sup> dropped through emigration and excess of deaths to 1,480,000 in

<sup>3</sup> See pp. 12-13.

<sup>4</sup> See *Annuaire Statistique de la ville de Riga*, Vol. IV, 1927-1928, p. 17.

1919,<sup>\*</sup> while in Riga it even shrunk from 500,000 to 200,000. Re-immigration set in on a large scale in the fall of 1920<sup>\*</sup> and the census of 1930 revealed a population of 1,900,045 (Riga, 377,917), but even then Latvia had fewer inhabitants than 33 years before.

The birth rate, which had been low before the war, never reached the pre-war level again. It was 22.8 in 1922-1923 and dropped to 18.8 in 1929. The gross reproduction rate in that year was 1.06 and the net reproduction rate 0.90. Since the length of the female generation is 30.6 years, the yearly rate of decrease of the stable population is 3.4 per 1,000.

The fact that the deficit in the balance of births and deaths is smaller for Latvia than for Estonia is exclusively due to the difference in mortality. Fertility is equally low in both countries; but mortality is more favorable in Latvia.

*Lithuania.* Fertility in Lithuania resembles much more that of Poland than that of the other Baltic States. The birth rate fluctuated from 1923 to 1928 between 28.2 and 29.2. The gross reproduction rate in 1928 was still 1.85, that is, exactly as high as in the Baltic provinces as a whole in 1896-1897. Mortality was rather low in 1928, the death rate being 15.5. The birth rate dropped to 27.2 in 1929-1930 while the death rate rose to 16.4.

<sup>\*</sup> See Skujenieks, M., *Latvija 1918-1928*, p. 5.

<sup>\*</sup> See *Statistisches Jahrbuch der Stadt Riga*, Vol. III, 1925-1926, p. 1.

## CHAPTER V

### SOUTHWESTERN EUROPE

Southwestern Europe, in the sense in which we use the term in this volume, is composed of the following states and possessions:

Territories	Population	Date of Census or Estimate
Italy .....	41,846,000 <sup>1</sup>	Dec. 31, 1930
Portugal .....	6,660,852	Dec. 1, 1930
Spain .....	22,760,854	Dec. 31, 1929
Andorra .....	5,231	1890
Gibraltar .....	16,831 <sup>2</sup>	Dec. 31, 1928
Monaco .....	24,927	Dec. 31, 1927
San Marino ....	13,013	Aug. 1927

Satisfactory birth statistics are available for all those territories with the exception of the Republics of Andorra and San Marino. We shall discuss here only the three demographically important countries, Italy, Spain, and Portugal,<sup>3</sup> and we must be brief even for those countries since the data on the age of mothers are scanty and life table material is scarce.

The following table shows the trend of the birth rates:

<sup>1</sup> While this volume was in press the Central Institute of Statistics of Italy published as preliminary result of the census of April 21, 1931, the figure of 41,145,041. See *Notiziario Demografico*, Vol. IV, 1931, p. 404. This result has not been used in the following analysis.

<sup>2</sup> Civil population.

<sup>3</sup> For Andorra, Gibraltar, Monaco, and San Marino, see Appendix A, pp. 67, 76-77, 87, 116.

YEARLY BIRTH RATES BY PERIODS IN SOUTHWESTERN EUROPE,  
1863-1930

Period	Italy	Portugal	Spain
1863-1865.....	38.7	....	....
1866-1870.....	37.1	....	....
1872-1875.....	36.8	....	....
1876-1880.....	36.9	....	35.8 <sup>a</sup>
1881-1885.....	38.0	....	36.4
1886-1890.....	37.5	....	36.0
1891-1895.....	36.0	....	35.3
1896-1900.....	34.0	....	34.3
1901-1905.....	32.6	....	35.1
1906-1910.....	32.7	....	33.2
1911-1914.....	31.7	32.7 <sup>b</sup>	30.8
1915-1919.....	22.7	30.2	29.4
1920-1921.....	31.1	33.1	29.8
1922-1923.....	29.8 <sup>c</sup>	33.4	30.5
1924-1925.....	28.1	33.2	29.6
1926-1928.....	26.8	32.4	29.3
1929.....	25.2	30.6	28.8
1930.....	26.0	30.5	28.9

<sup>a</sup> 1878-1880 only.

<sup>b</sup> 1912-1914 only.

<sup>c</sup> Present territory from 1922 on; pre-war territory 1922-1923: 29.7.

# I. ITALY

In the thirty-five year period from 1862 to 1896, the yearly birth rate of Italy oscillated between 34 and 39.3 and was similar to that of the more prolific countries of Western Europe. A decline, however, was noticeable since the early nineties and the birth rate after 1896 never reached 34 again. But the decline was less conspicuous than in Western Europe, and in 1911-1914 the birth rate was still 31.7.

The birth rate dropped further in the following years, but Italy was demographically less affected by the World War than any other belligerent country in Europe. In 1920, the birth rate temporarily returned to the pre-war level. It then resumed its downward trend and in 1928-

1930 was only 25.8. It was as low in those years as in Western and Northern Europe in 1910.

In 1921-1922, the gross reproduction rate was almost 2. It was still as high as in Denmark at the beginning of the century. In 1928-1930, it was only about 1.65, that is as low as in Denmark in 1911-1915. Mortality has decreased less in post-war times than has fertility. The net reproduction rate which was about 1.4 in 1921-1922, therefore, has decreased.

The population of Italy is still reproducing itself. But if fertility and mortality should continue to develop for another decade as they have in the last decade, the population will no longer hold its own.

## II. SPAIN AND PORTUGAL

The birth rate, which never in the course of the last fifty years was particularly high, has been more steady in Spain than in the other large countries of Europe. It oscillated from 1878 to 1908 between 33.2 and 37.1, and from 1909 to 1930 between 27.7 and 32.9. It showed a marked downward trend from 1909 to 1919, gained a little in 1920-1923, but fell again. The gross reproduction rate in 1922-1929 was about 1.9 and did not then essentially differ from that of Italy.

If there is one country to disprove the theory that in a white man's country lack of education leads to a high fertility, it is Portugal. According to the census of 1921, 56 per cent of the males and 73 of the females over 15 years cannot read, and yet fertility is far from being high. The birth rate was 34.7 in 1912 and dropped to 27.6 in 1919. It oscillated from 1920 to 1928 between 31.0 and 33.7 and fell to 30.6 in 1929-1930. It was most of the time slightly



higher in Portugal than in Spain, but the percentage of women of child-bearing age was also slightly higher in Portugal.

In spite of a high mortality, the population of both Spain and Portugal is moderately reproducing itself and probably at least as much as before the World War.

## CHAPTER VI

### SUMMARY

*Eastern Europe.* In 1896-1897, seven children were born in Russia to the average woman (married or unmarried) who passed through child-bearing age. But since mortality was very high, 100 mothers gave birth to not more than 165 future mothers. In 1926-1927, 5.6 children only were born to the average woman passing through child-bearing age. But since mortality had greatly decreased, 100 mothers gave birth to at least as many future mothers as 30 years before.

*Southeastern Europe.* At the beginning of this century, 6.7 children were born in Bulgaria to the average woman passing through child-bearing age and 5.5 to 5.7 in Serbia and Croatia-Slavonia. Each 100 mothers gave birth to 188 future mothers in Bulgaria, to 161 in Serbia, and to 142 in Croatia-Slavonia. In 1929, 3.9 children only were born in Bulgaria to the average woman passing through child-bearing age, and 100 mothers gave birth to 129 future mothers only. Bulgaria which, a generation ago, had a higher net reproduction than any other country we know of, has joined Western and Northern Europe in their downward trend. The available statistics do not afford a proof of a similar development for other countries of Southeastern Europe, but those statistics are too inadequate to allow a final judgment.

*Central Europe.* At the beginning of this century, the population of Central Europe reproduced itself as rapidly

as in the more prolific countries of Western and Northern Europe, although not quite as much as in Eastern and Southeastern Europe. About 5.2 children were born to the average woman passing through child-bearing age. Each 100 mothers gave birth to about 144 future mothers. In the course of the last generation, reproduction has decreased in every section of Central Europe, but not everywhere to the same degree. Although conditions are in a transitional stage, it will be helpful to distinguish three groups of countries:

1. In Poland, in Lithuania, and in the eastern provinces of Czechoslovakia, nearly four children, on an average, are born to a woman passing through child-bearing age. Each 100 mothers give birth to about 130 future mothers.

2. In Hungary, nearly three children, on an average, are born to a woman passing through child-bearing age. But as mortality has decreased still more than fertility, each 100 mothers give birth to about 120 future mothers.

3. In Austria, in the western provinces of Czechoslovakia, in Estonia, and in Latvia, about two children, on an average, are born to a woman passing through child-bearing age. In each of those sections 100 mothers give birth to less than 100 future mothers. Conditions are here about the same as in Western and Northern Europe. If fertility does not rise again, the population is doomed to die out whatever may be the course of mortality.

*Southwestern Europe.* The reproduction of the population of Southwestern Europe probably never was very rapid. In Spain nearly four children, on an average, are born to a woman passing through child-bearing age. In Italy this figure has decreased to 3.4 or 3.3. Even here the population is still reproducing itself, but at a moderate speed.

The general trend of fertility and of net reproduction in the countries discussed in this volume may be seen from the tables on pages 63-64. The times have passed when in a country like the Ukraine 7.5 children, on an average, were born to a woman (married or unmarried) who passed through child-bearing age. But they still number about 5.5 in Russia and if fertility and mortality as they prevailed in Russia in 1928 remain constant the population will increase at an annual rate of about 1.8 per cent. Outside of Russia there seems no country left in Europe with more than an average of four children to a woman passing through child-bearing age; in some countries the average is as low as two, that is as low in Western and Northern

AVERAGE NUMBER OF CHILDREN BORN TO A WOMAN (MARRIED OR UNMARRIED) PASSING THROUGH CHILD-BEARING AGE

Number	1896-1897	1900-1901	1902-1907	1908-1913	1920-1921	1922-1923	1924-1927	1929
7.5	Ukraine							
7.1	Russia							
6.6		Bulgaria <sup>a</sup>						
6.5			Bulgaria <sup>b</sup>					
5.7		Serbia						
5.6							Russia	
5.5		Croatia	Croatia					
5.4		Hungary						
5.2				Croatia		Bulgaria <sup>c</sup>		
5.1	Austria <sup>d</sup>		Hungary				Ukraine	
4.9		Austria <sup>e</sup>		Hungary				
4.7			Austria <sup>b</sup>		Czech E		Bulgaria	
4.6								Ukraine
4.1				Austria <sup>c</sup>	Italy	Spain <sup>f</sup>	Poland <sup>g</sup>	
4.0								
3.9								Bulgaria
3.8	Baltic Prov				Hungary			Lithuania <sup>h</sup>
3.4								Czech E.
3.0					Czech W			Italy <sup>i</sup>
2.9						Estonia		Hungary <sup>j</sup>
2.5								Czech W.
2.3								Latvia
2.2								Austria <sup>k</sup>
2.0								

<sup>a</sup> 1901-1905

<sup>b</sup> 1906-1910

<sup>c</sup> 1921-1926

<sup>d</sup> 1895-1900

<sup>e</sup> 1913

<sup>f</sup> 1922-1929

<sup>g</sup> 1927

<sup>h</sup> 1928

<sup>i</sup> 1928-1930

<sup>j</sup> 1930

AVERAGE NUMBER OF FUTURE MOTHERS BORN TO EACH MOTHER  
(Net Reproduction Rate)

Number	1896-1897	1900-1901	1906-1910	1913	1922-1923	1926-1927	1929
1.95	Ukraine	.....	.....	.....	.....	.....	.....
1.90	.....	Bulgaria <sup>a</sup>	.....	.....	.....	.....	.....
1.75	.....	.....	Bulgaria	.....	.....	.....	.....
1.70	.....	.....	.....	.....	.....	Ukraine	Russia <sup>b</sup>
1.65	Russia	.....	.....	.....	.....	.....	.....
1.60	.....	Serbia	.....	.....	.....	.....	.....
1.55	.....	.....	.....	.....	Bulgaria <sup>c</sup>	.....	.....
1.45	.....	Austria <sup>d</sup>	.....	.....	.....	Bulgaria	.....
1.40	Austria <sup>e</sup>	Hungary	.....	.....	Italy <sup>f</sup>	.....	Ukraine
1.30	.....	Croatia	Austria	Austria	.....	Poland <sup>g</sup>	Bulgaria
1.20	.....	.....	.....	.....	.....	.....	Czechoslovakia, East
1.15	Baltic Prov.	.....	.....	.....	Hungary <sup>h</sup>	.....	Hungary <sup>i</sup>
0.95	.....	.....	.....	.....	.....	.....	Czechoslovakia, West
0.90	.....	.....	.....	.....	Estonia	.....	Latvia
0.80	.....	.....	.....	.....	.....	.....	Austria <sup>b</sup>
0.65	.....	.....	.....	.....	.....	.....	Estonia

<sup>a</sup> 1901-1905.<sup>b</sup> 1928.<sup>c</sup> 1921-1926.<sup>d</sup> 1901-1905.<sup>e</sup> 1895-1900.<sup>f</sup> 1921-1922.<sup>g</sup> 1927.<sup>h</sup> 1930.<sup>i</sup> 1920-1921.

Europe. Even in Bulgaria whose population, if fertility and mortality had remained what they were in 1901-1910, would increase at a yearly rate of 2 per cent, the genuine increase with present fertility and mortality is no more than 0.9 per cent. And some countries, like Austria and Estonia, on the basis of fertility and mortality of 1928, present a genuine yearly decrease of 0.8 per cent:

## **APPENDICES**



## APPENDIX A

### BIRTHS AND BIRTH RATES

The difficulties arising from varying definitions of live-born and the methods of computing the average population and birth rates have been discussed in Volume I, pages 63-72. We shall here first briefly describe the condition of birth registration and birth statistics in the various countries of Eastern, Central, and Southern Europe and subsequently state the sources on which our general tables on population, births, and birth rates are based.

#### I. BIRTH REGISTRATION AND BIRTH STATISTICS

##### Albania

Civil registration is obligatory in Albania, but as in practically all countries predominantly Mahometan,<sup>1</sup> birth registration is most inadequate. Special factors hampering complete registration in Albania are "the frequent insurrections, the ignorance of the peasants, the heavy fees for registration."<sup>2</sup> Birth registration on the whole seems to be more deficient for girls than for boys.

The number of live-born reported in 1922-1927 was as follows: 11,414; 7,936; 9,725; 9,770; 12,105; and 12,648.<sup>3</sup> Since the population at that time exceeded 900,000,<sup>4</sup> it is evident that only a small fraction of the actual number of births was reported.

##### Andorra

No birth statistics seem so far to have been compiled for the Republic of Andorra, which has about 5,000 or 6,000 inhabitants.<sup>5</sup>

<sup>1</sup> According to the census of May 25, 1930, 696,339 of the 1,003,097 inhabitants of Albania were Mahometans. See the official Albanian Bulletin *Fletorja Zyrtare*, Vol. IX, No. 69, p. VIII.

<sup>2</sup> Selenica, T., *L'Albanie en 1927*, p. CX.

<sup>3</sup> See *ibid.*, p. CXII.

<sup>4</sup> The population figures of 814,380 and 833,618, ascertained in 1923 and 1927, were evidently incomplete. See *ibid.*, pp. CV-CVI.

<sup>5</sup> The figure usually given in recent publications is 5,231. But those who quote it do not seem to realize that this figure is already mentioned in Deverells, *Mapa de las Valls de Andorra*, published in 1890. See Levasseur, E., and Bodio, L., "Statistique de la superficie et de la population des contrées de la Terre," *Bulletin de l'Institut international de statistique*, 1902, Vol. XII. Part II, p. 62.



## Austria

Birth registration and the collection of birth statistics were organized in Austria at an early date in such a manner that the official birth data for more than a century may be considered as almost complete.<sup>6</sup> The official figures for live-born may even rather be too high, since especially in former times baptized still-born frequently were registered as live-born.<sup>7</sup>

It should be noted, however, that the official statistics prior to 1895 comprised only the births within the civilian population. But the number of births including the military population was later officially published for 1881-1894, and *Statistique internationale du mouvement de la population* (published by the French Statistical Office) gives the total births also for 1872-1880. The number of births occurring within the military population was quite small; it amounted in 1872-1880 to only 1 per 1,000 of the total births, while the military population constituted about 8 per 1,000 of the total population.

For 1921 no data are available for the *Burgenland*, ceded by Hungary; they have been officially estimated on the basis of the data for 1920 and 1922.

The pre-war Austrian statistics included the kingdoms and states represented in the *Reichsrat*; they did not include Bosnia and Herzegovina. The total territory covered by those pre-war statistics had on December 31, 1910, a population of 28,571,934. This territory was distributed by the Treaty of Saint-Germain in the following manner:<sup>8</sup>

States	Population 1910
Austria .....	6,355,214
Czechoslovakia .....	10,026,180
Poland .....	8,171,578
Italy .....	1,656,132
Yugoslavia .....	1,562,732
Rumania .....	800,098
Total .....	28,571,934

<sup>6</sup> See League of Nations, Health Organisation, Statistical Handbooks Series: No. 5, *The Official Vital Statistics of the Republic of Austria*, pp. 25-27. For the deficiencies in the war period, see below, p. 124.

<sup>7</sup> See *Tafeln zur Statistik der Österreichischen Monarchie*, New Series, Vol. II, 1852-1854, Part I, Table 3, p. 87, and *The Official Vital Statistics of the Republic of Austria*, p. 31.

<sup>8</sup> See *Statistisches Handbuch der Čechoslovakischen Republik* (German), Vol. II, 1925, p. 96.

Austria thus retained only a territory with a population of 6,355,214 (1910). It received in addition from Hungary the *Burgenland* which in 1910 had a population of 303,794.\*

No attempt has ever been made to compute the number of births in the pre-war territory of Austria since 1913. But the Statistical Office of the Republic of Austria has estimated the population and has computed the number of births in the present territory for each year from 1871 on. Our tables, therefore, give side by side data for the pre-war territory up to 1913 and for the post-war territory from 1871 on.

### Bulgaria

Registration was organized in Bulgaria three years after the liberation from Turkey by a law which requested the ministers of all denominations to register from 1881 on, births, marriages, and deaths. With the beginning of 1893 registration was transferred from the clergy to civil authorities.<sup>10</sup> We have no reason to doubt the completeness of the birth statistics for the Greek-Orthodox who constituted 70 per cent of the total population in 1881, 77 per cent in 1887 (after the annexation of Eastern Rumelia), and 79-84 per cent at the later censuses. But we suspect that until about 1905 there were serious gaps in the registration of births to Mahometans. These, in 1881, constituted as much as 29 per cent of the total population, while their share decreased from 21 per cent in 1887 to 15 per cent in 1905 and 14 per cent in 1910-1926.

There are two reasons which cause us to question the earlier Mahometan birth statistics: the small number of reported births, and the large excess of male among all reported births.

The number of Mahometans ascertained at the census of 1881 was 578,000.<sup>11</sup> The average yearly number of births reported in

\* See *ibid.* According to the official Austrian statistics (see *Statistisches Handbuch für die Republik Österreich*, Vol. X, 1929, p. 2), Austria retained a territory with a population of 6,354,184, while the *Burgenland* in 1910 had a population of 291,800.

<sup>10</sup> See *Mouvement de la population dans le royaume de Bulgarie en 1912*, Part II, p. LXVII; *ibid.*, 1926, pp. V-VI.

<sup>11</sup> See Préfecture de la Seine, Service de la Statistique Municipale, Bertillon, Jacques, *Statistique internationale résultant des recensements de la population exécutés dans les divers pays de l'Europe*, Paris, 1899, p. 155.

1881-1887 was 12,785 of which only 5,844 were females.<sup>12</sup> The proportion of male to female births was 119 to 100.

The trend of the births to Mahometans from 1888 on was as follows:

MAHOMETAN BIRTHS IN BULGARIA, 1888-1927\*

Periods	Mean Population	Yearly Births	Yearly Birth Rate	Male Births per 100 Female Births
1888-1890.....	666,500	15,351	23.0	112.6
1891-1895.....	646,000	15,549	24.1	113.6
1896-1900.....	643,400	20,473	31.8	114.0
1901-1904.....	627,600	19,824	31.6	111.5
1905-1908.....	604,500	22,902	37.9	109.2
1909-1912.....	602,100	23,897	39.7	109.6
1919-1922.....	690,800	24,346	35.2	108.2
1923-1927.....	765,000	30,800	40.3	106.8

\* Mean population estimated on the basis of the census data given in *Annuaire statistique*, Vols. XXI-XXII, 1929-1930, p. 26. For births, see *ibid.*, Vol. IV, 1912, p. 75, Vols. XXI-XXII, 1929-1930, pp. 60-61; *Mouvement de la population*, 1904, Part I, pp. 2-3, 1907, Part I, pp. 2-3, 1912, Part II, pp. 2-3, 1926, pp. 2-3.

If we assume that the actual birth rate of the Mahometans in 1881-1904 was all the time 38, the birth rate for the country as a whole would have to be corrected as follows:

Period	Official Birth Rate	Corrected Birth Rate
1888-1890 .....	36.3	39.4
1891-1895 .....	37.5	40.2
1896-1900 .....	41.0	42.1
1901-1904 .....	39.9	41.0

The omissions would then even in 1888-1890 not have exceeded 8 per cent of the total births<sup>13</sup> and we shall therefore include the births from 1888 on in our general tables.

<sup>12</sup> See *Annuaire statistique du royaume de Bulgarie*, Vol. IV, 1912, p. 75.

<sup>13</sup> Attention may incidentally be called to the fact that prior to 1909, the gaps in the registration of female births were comparatively much greater for the Jews than for the Mahometans. The number of males per 100 female births was, for the Jews:

1881- 1887 182	1888- 1890 142	1891- 1895 141	1896- 1900 127	1901- 1904 114	1905- 1908 114	1909- 1912 105
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But the male births apparently were reported completely and since the Jews all this time constituted less than one per cent of the population, the omission of female Jewish births cannot have affected essentially the birth rate for the country as a whole.

# BIRTHS AND BIRTH RATES

71

## POPULATION, BIRTHS, AND BIRTH RATES IN BULGARIA, 1911-1921\*

Years	Pre-Balkan-War Territory			Pre-World-War Territory <sup>d</sup>	World-War-Time Territory		Present Territory <sup>e</sup>
	Total <sup>a</sup>	Excluding Southern Dobrudja <sup>b</sup>	Excluding Southern Dobrudja and part of West Bulgaria <sup>c</sup>		Total <sup>a</sup>	Excluding Territories Gained in 1913-1915 but Lost in 1919 <sup>f</sup>	
	96,345.5 sq. km.	88,649.7 sq. km.	79,408.8 sq. km.	111,836.9 sq. km.	114,424.5 sq. km.	104,691.2 sq. km.	103,146.2 sq. km.

### Population on July 1

1911....	4,368,900	4,084,900	....	....	....	....	....
1912....	4,432,400	4,144,400	....	....	....	....	....
1913....	4,496,700	4,194,100	....	....	....	....	....
1914....	....	4,233,800	....	4,852,000	....	....	....
1915....	....	4,273,900	....	4,899,000	....	....	....
1916....	....	4,314,500	4,253,400	....	5,002,700	4,711,400	4,650,300
1917....	....	4,355,400	4,288,700	....	5,051,300	4,756,800	4,690,100
1918....	....	4,396,700	4,325,300	....	5,100,500	4,802,600	4,731,200
1919....	....	4,431,200	4,365,400	....	5,150,200	4,841,700	4,775,900
1920....	....	....	4,405,700	....	....	....	4,825,400
1921....	....	....	....	....	....	....	4,897,300

### Births

1911....	175,708	163,707	....	....	....	....	....
1912....	184,705	173,047	....	....	....	....	....
1913....	....	107,657	....	....	....	....	....
1914....	....	190,941	....	....	....	....	....
1915....	....	171,802	....	....	....	....	....
1916....	....	91,130	90,015	....	....	100,135	99,020
1917....	....	72,906	71,913	....	....	81,771	80,778
1918....	....	95,013	94,045	....	....	101,089	100,121
1919....	....	148,860	147,080	....	....	158,505	156,725
1920....	....	....	180,226	....	....	....	192,665
1921....	....	....	184,019	....	....	....	196,942

### Birth Rates

1911....	40.2	40.1	....	....	....	....	....
1912....	41.7	41.7	....	....	....	....	....
1913....	....	25.7	....	....	....	....	....
1914....	....	45.1	....	....	....	....	....
1915....	....	40.2	....	....	....	....	....
1916....	....	21.1	21.2	....	....	21.3	21.3
1917....	....	16.7	16.8	....	....	17.2	17.2
1918....	....	21.6	21.7	....	....	21.0	21.2
1919....	....	33.6	33.7	....	....	32.7	32.8
1920....	....	....	40.9	....	....	....	39.9
1921....	....	....	....	....	....	....	40.2

\* See *Annuaire statistique*, Vol. XVII, 1925, p. 45; *ibid.*, Vols. XXI-XXII, 1929-1930, pp. 4-5, 14, 43.

<sup>a</sup> Territory as of 1885-1913.

<sup>b</sup> Ceded to Rumania through the Treaty of Bucharest (1913).

<sup>c</sup> Ceded to Yugoslavia through the Treaty of Neuilly (1919).

<sup>d</sup> Pre-Balkan-War territory excluding Southern Dobrudja, but including the parts of Macedonia and Thrace ceded by Turkey through the Treaty of Bucharest (1913).

<sup>e</sup> Pre-World War territory including the territory along the Maritza valley ceded by Turkey through the convention of 1915.

<sup>f</sup> Ceded to Greece and Yugoslavia through the Treaty of Neuilly (1919).

<sup>g</sup> Pre-Balkan-War territory excluding Southern Dobrudja ceded to Rumania (1913) and part of Western Bulgaria ceded to Yugoslavia (1919), but including such territories acquired from Turkey (1913-1915) as were not ceded to Greece (1919) and Yugoslavia (1919).

## 72 THE BALANCE OF BIRTHS AND DEATHS

As to the earlier period, where data anyway are available for Northern Bulgaria only, we shall confine ourselves to giving here the following table:

Period	Mean Population	Yearly Births	Birth Rate
1881-1885 .....	2,072,630	76,216	36.8
1886-1887 .....	2,165,960	76,447	35.3

For the war years 1913-1918, birth statistics again were incomplete<sup>14</sup> but perhaps they need not be distrusted more than the birth statistics of most other belligerent countries.<sup>15</sup>

Bulgaria, in 1885, annexed Eastern Rumelia. The territory remained unaltered until 1912. But in the course of the next seven years the boundaries were changed three times: through the Treaty of Bucharest in 1913, through the convention with Turkey in 1915, and through the Treaty of Neuilly in 1919.<sup>16</sup> The effect of these territorial changes upon the number of births may be seen from the table on page 71.

### Czechoslovakia

When the Republic of Czechoslovakia was established in 1918, birth registration was satisfactory all over the state. For some years the Austrian system was maintained in the western provinces and the Hungarian system in the eastern provinces; but on January 1, 1925, a uniform system was introduced throughout the Republic.<sup>17</sup>

The collection of birth statistics went on as before, and attempts were made to establish birth statistics for prior years back to 1901. The difficulties were not insurmountable for the eastern provinces—Slovakia and Carpatho-Russia—that is the territory definitely ceded by Hungary through the Treaty of Trianon; but they could not be overcome entirely for the western provinces, Bohemia, Moravia, and Silesia. Those provinces on the whole

<sup>14</sup> See *Mouvement de la population*, 1918, Part II, pp. VI-VII.

<sup>15</sup> See Roesle, E., "Die Bewegung der Bevölkerung in Bulgarien in den Jahren 1911-1924," *Archiv für Soziale Hygiene und Demographie*, New Series, Vol. I, 1925-1926, p. 437.

<sup>16</sup> See Pasvolosky, Leo, *Bulgaria's Economic Position*, pp. 51-53.

<sup>17</sup> See League of Nations, Health Organisation, Statistical Handbooks Series: No. 8, *The Official Vital Statistics of the Republic of Czechoslovakia*, p. 37.

correspond to the former Austrian states bearing those names. But present Bohemia also includes a part of the district of Weitra, and Moravia a part of the district of Feldsberg, which through the Treaty of Saint-Germain were ceded from the former Austrian state of Lower Austria. As to Austrian Silesia, a part of the district of Teschen was ceded to Poland, while the district of Hultschin, formerly belonging to Prussian Silesia, was ceded to Czechoslovakia through the Treaty of Versailles and now constitutes part of Czech Silesia. Some slight exchanges of territories between Czechoslovakia and Rumania, Hungary, Germany, and Poland occurred in 1921-1924.<sup>18</sup> The difficult demographic situation arising from the changes in frontiers may be seen from the following table.

POPULATION OF PRESENT CZECHOSLOVAKIA\*

Territory	December 31, 1900	December 31, 1910	February 15, 1921	
			(1)	(2)
Austrian Bohemia	6 318 697	6 769 378	6,659,515	
Part of Weitra	+ 10 796	+ 12,585	+ 11,067	
Present Bohemia	6 329,493	6 781,963	6,670,582	6,670,610
Austrian Moravia	2 437 706	2 622 297	2,651,852	
Part of Feldsberg	+ 9 415	+ 10 730	+ 11,032	
Present Moravia	2 447,121	2,633,027	2,662 884	2,662,856
Austrian Silesia	680 422	756,949	} 624 263	
Part of Teschen ceded to Poland	-130 198	-145,903		
District of Hultschin	+ 40,550	+ 45 396	+ 48,005	
Present Silesia	590,774	656,442	672,268	675,392
Slovakia	2 791 168	2,923,878	3,000,870	2,998,266
Carpatho-Russia	528 903	597 062	606,568	604,593
Czechoslovakia	(1) 12 687,459	(1) 13 592 372	13,613,172	13,611,717

\* See *Statistisches Handbuch der Čechoslovakischen Republik*, Vol. II, 1925, pp. 362, 19\*, 25\*, 94\*, Vol. III, 1928, p. 277, *Czechoslovakische Statistik*, Vol. 9, pp. 36\*, 138\*.

(1) Territory as of February 15, 1921

(2) Territory as of December 31, 1927

Continuous birth statistics have recently been published by the Czechoslovakian Statistical Office for Slovakia and Carpatho-Russia for every year from 1901 on. Similar statistics have been published for Bohemia and Moravia, but they exclude for 1901-1919 the Czech parts of the districts of Weitra and Feldsberg covering about 0.2 and 0.4 per cent of the population of those

<sup>18</sup> See *Statistisches Handbuch der Čechoslovakischen Republik*, Vol. II, 1925, pp. 359, 393, Vol. III, 1928, p. 275

provinces. The Office has moreover published, for each year from 1901 on, the estimated number of births in Silesia, excluding the part of the district of Teschen ceded to Poland, but also excluding for the years 1901-1910 the district of Hultschin covering almost 7 per cent of the population of Silesia. The combined available birth figures for the three western provinces thus exclude for 1901-1910 about 0.7 per cent and for 1911-1919 about 0.2 per cent of the total population. In view of the minor significance of these deficiencies the Office has computed birth rates for the entire republic for each year from 1901 on, but without publishing absolute figures.

### Danzig

The German registration system as it existed in Danzig before the establishment of the Free City in 1919 has been maintained. The Statistical Office of the Free City has published complete birth statistics for each year from 1920 on.

### Estonia

The compilation of birth statistics for the Russian province of Estland had not been altogether satisfactory. Conditions were particularly bad in the latter part of the World War and remained so after the establishment of the Republic of Estonia, of which the former province constituted a part. They improved only after July 1, 1921, when the new Central Statistical Bureau began to function.<sup>19</sup> Yet for some years to come birth registration often was still considerably delayed.<sup>20</sup> This was probably due in part to the fact that 30 days after each birth are allowed for its registration. But the cases of delays have diminished in course of time,<sup>21</sup> and the birth data seem to have been practically complete, at least since a law extending civil registration became effective on July 1, 1926.<sup>22</sup> So far registration had indeed been effected mostly through the clergy.

As to the movements of the population, the same system still prevails as was prescribed in the days of the Russian Empire, the clergy in the country having to register births, deaths and mar-

<sup>19</sup> See *Eesti Demograafia*, Vol. II, p. 50.

<sup>20</sup> See *ibid.*, pp. 11, 51; *Recueil Mensuel du Bureau Central de Statistique de l'Estonie*, No. 47, February 1926, Appendix, pp. 16-17.

<sup>21</sup> See International Statistical Institute, *Renseignements sur l'organisation actuelle des statistiques de l'état civil dans divers pays*, Hague 1929, pp. 24, 62.

<sup>22</sup> See *ibid.*, p. 62; *Recueil Mensuel*, No. 64, March 1927, p. 98.

riages, whereas in most of the towns this work is done by the civil authorities. A reform of the system was made by the law of November 12th, 1925, introducing a civil register with records for each person living in Estonia.<sup>23</sup>

In 1923, 0.3 per cent only of the total number of births had been registered by the civil authorities.<sup>24</sup> The situation in 1929 has been officially described as follows:

The registration of births, deaths, and marriages is done by the civil registration bureaus of the local administrations and also by the clergy if they have expressed such a desire and if the Minister of Internal Affairs has authorized them to do so. The clergyman enters the births and the deaths in a book of civil acts and submits copies to the bureau where the civil registers are kept in order to be transcribed in the register.<sup>25</sup>

As to the earlier period, we shall confine ourselves to reproducing here the following data:

## BIRTHS AND BIRTH RATES IN ESTONIA, 1884-1921\*

Year	Births	Birth Rate	Year	Births	Birth Rate	Year	Births	Birth Rate
1884	11,704		1897	11,937	28.8	1910	12,193	26.1
1885	11,489		1898	12,407	29.6	1911	11,749	24.9
1886	11,672		1899	12,453	29.6	1912	11,900	25.1
1887	11,856		1900	12,487	29.2	1913	11,653	24.4
1888	11,809	30.3	1901	12,703	29.5	1914	11,854	24.7
1889	11,908	30.4	1902	13,101	30.1	1915		22.6
1890	11,872	30.0	1903	12,704	28.8	1916		19.5
1891	11,982	29.9	1904	12,749	28.6	1917		16.9
1892	11,801	29.3	1905	11,987	26.6	1918		20.2
1893	11,344	28.0	1906	12,426	27.5	1919	18,456	17.3
1894	11,336	27.7	1907	12,304	27.0	1920	19,625	18.4
1895	11,922	29.0	1908	11,861	25.8	1921	22,067	20.3
1896	12,227	29.5	1909	11,970	25.8			

\* See for births 1884-1893, 1900, and 1909, *Annuaire statistique de la Russie* 1884-1885, p. 32, *ibid.*, 1890, pp. 4-9, *ibid.* 1896, pp. 20-29, *ibid.*, 1905, pp. 120-121, *ibid.*, 1912, Part II, p. 4, 1894-1899 *Mouvement de la population dans la Russie d'Europe en 1894*, pp. 14-16, *ibid.*, 1895, pp. 14-15, *ibid.*, 1896, pp. 14-15, *ibid.*, 1897, pp. 14-15, *ibid.*, 1898, pp. 14-15, *ibid.*, 1899, pp. 14-15, 1901-1908 and 1910-1914 *Recueil Mensuel*, No. 55, October 1926, p. 6, 1919-1921, *Eesti Demograafia*, Vol. IV, p. 43.

See for birth rates 1888-1896 Pokrovsky, B., *Influence des récoltes et des prix du blé sur le mouvement naturel de la population en Russie*, *Bulletin de l'Institut international de statistique*, Vol. XI, Section 2, p. 205, 1897 and 1899 *Mouvement* 1897, p. IX, *ibid.* 1899, p. VII, 1900 and 1909 *Annuaire statistique* 1905, pp. 120-121, *ibid.* 1912, Part II, p. 4, 1901-1908 and 1910-1914 *Recueil Mensuel*, No. 55, p. 6, 1915-1921 *Eesti Demograafia*, Vol. IV, p. 18. Rate for 1898 estimated.

<sup>23</sup> League of Nations, Health Organisation, *Statistical Handbooks Series No. 6, The Official Vital Statistics of the Scandinavian Countries and the Baltic Republics*, p. 104.

<sup>24</sup> See *Eesti Demograafia*, Vol. II, p. 51.

<sup>25</sup> *Renseignements sur l'organisation actuelle des statistiques de l'état civil*, 1929, p. 24.



## Gibraltar

The population of the British possession, Gibraltar, is subdivided as follows:

- I. Military population
- II. Civil population resident in the Fortress
  1. Fixed civil population, that is, persons who reside in Gibraltar without permit
  2. Resident alien population, that is, persons who reside in Gibraltar on temporary permit
  3. Non-resident population, that is, persons who enter Gibraltar on daily permit (including the majority of the laborers on the Admiralty, etc., works) or for the sake of medical or surgical treatment
- III. Port and Harbour population

The Health Reports regularly contain birth statistics only for the "fixed civil population" (II, 1).

As to the military population (I), which at the censuses of 1860-1911 comprised about 6,000 persons, the Health Reports mention as numbers of births for 1892-1896: 112, 146, 126, 89, and 124, for 1903-1904, 129 and 113, for 1907, 126.<sup>28</sup>

The resident alien population (II, 2) is omitted "as no births occur amongst the aliens, who reside here under special conditions regarding marriage,"<sup>29</sup> an official explanation which is not very convincing, at least not for pre-war times, when the resident alien population comprised from 2,000 to 3,000 inhabitants.<sup>30</sup>

<sup>28</sup> See *Annual Report on the Public Health of Gibraltar for the Year 1895*, p. 5; *ibid.*, 1896, p. 4; *ibid.*, 1903, p. 4; *ibid.*, 1904, p. 3; *ibid.*, 1907, p. 3. The vital statistics of the major part of, but not of the entire, military population are dealt with in the Annual Reports of the Army Medical Department; see *ibid.*, 1891, p. 4.

<sup>29</sup> *Ibid.*, 1892, p. 3.

<sup>30</sup> The Medical Officer of Health, in his report for the year 1891 (Appendix, p. 17), tried to fill this gap:

"The alien population in the 1881 Census included 537 wives and widows of natives and domiciled inhabitants. I have added these to the fixed civil population, thus making the alien population living here on permit in 1881 equal to 2,195 instead of 2,732 and the fixed civil population 16,186 instead of 15,649. In the 1891 Census the wives and widows of natives and domiciled inhabitants are not shewn as aliens."

But he evidently did not include the births to those women. The title of the table giving the births for 1881-1891 (*ibid.*, Appendix, p. 10)

The exclusion of the large non resident population (II, 3), which, of course, is subject to death, does not affect the value of the birth statistics

As to the "port and harbour population" (III), the Medical Officer of Health, in his report for the year 1891, stated.

The Port and Harbour population, although enumerated in the Census, has not been included in the report. It can scarcely be considered under the influence of the sanitary or unsanitary conditions of the Fortress and is besides composed almost exclusively of foreigners. Their statistics, therefore, if dealt with at all, must be dealt with separately. To embody them with those of the resident Civil population would be a complication without any compensatory advantage, especially as the elements composing the Gibraltar population are already sufficiently complicated."

We present here an abstract of the birth statistics for the "fixed civil population" for the years 1881-1928

POPULATION, BIRTHS, AND BIRTH RATES IN GIBRALTAR, 1881-1928

Period	Mean Population <sup>a</sup>	Yearly Births <sup>b</sup>	Birth Rate
1881-1885	16,330	481	29.5
1886-1890	16,690	489	29.3
1891-1895	17,073	507	29.7
1896-1900	17,300	520	30.0
1901-1905	17,488	511	29.2
1906-1910	17,000	431	25.4
1911-1914	16,500	397	24.1
1915-1919	16,259	374	23.0
1920-1921	16,467	402	24.4
1922-1923	16,174	366	22.6
1924-1925	16,152	366	22.7
1926-1928	15,998	385	24.2

<sup>a</sup> For 1881-1890 see *Annual Report* 1891, Appendix, p. 12. For 1891-1895, see *ibid.*, 1895, p. 4. For 1901, 1903-1906, and 1908-1911, see *ibid.*, 1903, p. 3, 1904, p. 3, 1905, p. 3, 1906, p. 3, 1908, p. 3, 1909, p. 3, 1910, p. 3, 1911, p. 3. For 1913-1928, see *ibid.*, 1926, p. 10. Figures for 1896-1900, 1902, 1907, and 1912 are our own estimates.

<sup>b</sup> For 1881-1891, see *Annual Report* 1891, Appendix, p. 10. For 1892-1895, see *ibid.*, 1895, p. 4. For 1896-1904, see *ibid.*, 1904, Appendix, p. 7. For 1905-1912, see *ibid.*, 1915, p. 32. For 1913-1928, see *ibid.*, 1926, p. 10, 1928, p. 10.

reads, it is true, "Total Civil Population of Gibraltar." Yet, the table giving the "Birth-rates for fixed Civil Population," (Appendix, p. 16) shows the relation of those birth numbers to the fixed civil population.

<sup>c</sup> *Ibid.*, 1891, p. 3.

## Greece

The Statistical Office of Greece, in a recent bulletin, states:

The compilation of vital statistics was begun from the year 1860 on; it was interrupted in 1890 and was again taken up in a more systematic manner from 1921 on. For the years 1862, 1863, 1886, 1887, and 1888, no statistical tables have been prepared. For the years 1889 and 1890 the data were preliminary.<sup>30</sup>

The birth data prior to 1870 are said to include stillbirths, but very few still-born were registered at that time, the number of still-born ascertained in the years 1870-1873 being respectively 36, 30, 41, and 30.<sup>31</sup> The statistics for 1864-1883 include the Ionian Islands annexed through the London Treaty of 1864; Thessalia and Arta annexed in 1881 are included only from 1884 on. The birth data for the nineteenth century are incomplete since the registers were not well kept.<sup>32</sup> We shall, therefore, confine ourselves to submitting, with due reserve, the following table:

POPULATION, BIRTHS, AND BIRTH RATES IN GREECE, 1860-1890

Period	Mean Population <sup>a</sup> (In thousands)	Yearly Births <sup>b</sup>	Birth Rate
1860-1861.....	1,093	31,632	28.9
1864-1865.....	1,367	39,495	28.9
1866-1870.....	1,424	40,880	28.7
1871-1875.....	1,529	43,330	28.3
1876-1880.....	1,651	44,302	26.8
1881-1883.....	1,747	42,626	24.4
1884-1885.....	2,083	57,950	27.7
1889-1890.....	2,204	76,446	34.7

<sup>a</sup> Computed for 1864-1880 and 1884-1890 from *Bulletin Mensuel*, Vol. II, 1930, No. 4, p. 1, for 1881-1883 from *Statistik des Deutschen Reichs*, New Series, Vol. 44, p. 67.

<sup>b</sup> See *Bulletin Mensuel*, Vol. II, 1930, No. 11, p. 1.

<sup>30</sup> *Bulletin Mensuel de Statistique (de la Grèce)*, Vol. II, 1930, No. 11, p. 1.

<sup>31</sup> See *Confronti Internazionali 1865-1883* (published by the Italian Statistical Office), p. CCI.

<sup>32</sup> See *Statistique internationale du mouvement de la population*, Vol. I, p. 63; see also *Statistik des Deutschen Reichs*, New Series, Vol. 44, p. 70; Roesle, E., "Die Entwicklung der Bevölkerung in den Kulturstaaten in dem ersten Jahrzehnt dieses Jahrhunderts," *Archiv für Soziale Hygiene und Demographie*, Vol. X, 1915, p. 299.

In 1920, a new law was passed,<sup>33</sup> making civil registration compulsory, but this law was not put into force before January 1, 1925,<sup>34</sup> and birth registration remained quite deficient for 1921-1924.<sup>35</sup> The omissions were most conspicuous in the urban districts<sup>36</sup> and in general for illegitimate children;<sup>37</sup> they were particularly frequent for girls,<sup>38</sup> since the Greek laws on military service and other laws make registration for boys more important.<sup>39</sup> Moreover, a considerable number of municipalities failed to send any reports to the Central Statistical Office.

From 1925 on, the number of municipalities not reporting at all decreased. The percentage of the population not covered by the birth statistics, which in 1921-1924 had been 13.1, 4.6, 6.7, and 9.2, dropped to 2.4, 2.2, and 1.7 in 1925, 1926, and 1927.<sup>40</sup> At the same time the registration law of 1920 was gradually put into force in most cities and registration thereupon improved considerably.<sup>41</sup>

POPULATION, BIRTHS, AND BIRTH RATES IN GREECE, 1921-1927\*

Year	Mid-Year Population of Municipalities Reporting Births	Live-born		Birth Rate			Male Births per 100 Female Births
		Total	Illegitimate	Rural Districts	Urban Districts	Total	
1921	4,833,221	118,272	880	....	....	24.5	116.3
1922	4,844,459	109,636	1,268	....	....	22.6	116.6
1923	5,720,000	118,926	1,439	21.5	16.8	19.9	117.0
1924	5,532,000	117,014	1,333	23.6	16.3	21.2	115.2
1925	5,819,800	156,367	2,283	28.0	24.4	26.9	111.7
1926	5,909,500	181,278	2,357	31.5	28.8	30.7	111.8
1927	6,023,230	176,527	2,140	30.8	26.3	29.3	111.6

\* The data, referring to the territory of the respective years, have been taken from *ibid.*, 1926, p. X; *ibid.*, 1927, pp. X, XXXVII, XLII.

<sup>33</sup> See *Statistique du mouvement de la population (de la Grèce)* 1923, p. V. (In quoting the pages, we have replaced the Greek letters by Roman figures.)

<sup>34</sup> See *ibid.*, 1924, p. VII; *ibid.*, 1925, p. VII.

<sup>35</sup> See *ibid.*, 1921, p. VII; *ibid.*, 1925, p. VIII.

<sup>36</sup> See *ibid.*, 1923, p. VII; *ibid.*, 1924, p. XI.

<sup>37</sup> See *ibid.*, 1921, p. XXXIV. Not a single illegitimate birth was registered in 1921 in the cities of Athens and Piraeos; see *ibid.*, p. XXXVII.

<sup>38</sup> See *ibid.*, 1921, p. XVI.

<sup>39</sup> See *ibid.*, 1921, p. XXXIV.

<sup>40</sup> Computed from *ibid.*, 1921, pp. VIII-IX; 1922, p. V; 1923, p. V; 1924, p. VIII; 1925, p. XXII; 1926, p. VI; 1927, p. IV.

<sup>41</sup> See *ibid.*, 1925, pp. VII-IX; 1926, p. III; 1927, p. III. The territory with obligatory civil registration was further extended on January 1, 1926. As a consequence thereof, the number of reported births increased from 1925 to 1926 in Erakleion (Candia) from 729 to 1,141,

But while the registration and the local compilation of statistics had become more efficient, the abolition of the Statistical Office under the dictatorship (January, 1926) greatly hampered the central collection of vital statistics which was only resumed after the reconstitution of the Office (September, 1926).<sup>42</sup>

For 1927, the last year for which detailed birth statistics have been published, the situation may be characterized as follows:

Compulsory birth registration had been introduced in 147 cities, comprising 37 per cent of the total population.<sup>43</sup> Registration was possibly fairly complete in most of those cities.<sup>44</sup> Conditions were less satisfactory in the rural districts. One hundred and sixty-five communes with 105,550 inhabitants had not sent in any report. Those communes which had reported births had reported far fewer births of girls than of boys. The excess of male over female live-born in communes of less than 10,000 inhabitants was 13 per cent.<sup>45</sup>

While therefore the Greek birth statistics for 1926 and 1927 are doubtless superior to the statistics of prior years they do not seem to have reached a degree of completeness which would warrant their inclusion in our general tables.<sup>46</sup>

in Canaan from 523 to 878; see *ibid.*, 1925, p. XXVIII, 1926, p. XII. By the end of 1926, the Ionian Islands were the only geographical division in which the law had not even partially been put into force. This was also the only one of the ten geographical divisions which from 1925 to 1926 showed a decrease in the number of reported births (from 5,453 to 4,655); see *ibid.*, 1925, p. XXIII, 1926, p. VII.

<sup>42</sup> See *Statistique du mouvement de la population*, 1925, p. VII; *ibid.*, 1926, p. III.

<sup>43</sup> See *ibid.*, 1927, p. III.

<sup>44</sup> As a striking exception may be mentioned the city of Aegion (11,000 inhabitants) which appears in the official statistics with the following figures:

Year	Marriages	Live-born		Deaths under 1 year		Total deaths	
		m.	f.	m.	f.	m.	f.
1925 .....	91	146	140	28	22	125	115
1926 .....	68	200	191	23	28	109	109
1927 .....	4	51	25	45	46	111	103

(See *ibid.*, 1925, pp. 20, 77; *ibid.*, 1926, pp. 22, 134; *ibid.*, 1927, pp. 22, 144.)

<sup>45</sup> See *ibid.*, 1927, pp. XXXVII.

<sup>46</sup> The preliminary birth statistics published for 1928 (see *Bulletin Mensuel*, Vol. III, 1931, No. 1, p. 2; No. 2, p. 1) seem to indicate that practically all municipalities reported for that year. The total number of births reported rose to 187,486, and the birth rate was 30.3. The number of male live-born per 100 females dropped to 109.9

## Hungary

Although registration had been organized in Hungary as early as in Austria,<sup>47</sup> an all-inclusive collection of birth statistics for Hungary began only in 1852.<sup>48</sup> It was discontinued in Croatia-Slavonia for 1858-1862, and again for 1866-1873,<sup>49</sup> in Hungary proper for 1860-1863 and again for 1866-1874.<sup>50</sup> But the Hungarian Statistical Office succeeded later in filling the gap for 1866-1874, so that a continuous series of birth data for Hungary proper exists from 1864 on, while the Statistical Bureau of Dalmatia-Croatia-Slavonia secured data at least for 1870-1873, so that we can construct a continuous series for the entire kingdom beginning with 1870. It should, however, be noted that the Hungarian Statistical Office itself was not sure whether the birth data for 1866-1874 in Hungary proper included the still-born or not<sup>51</sup> and that the Director of the Statistical Office of Croatia-Slavonia doubted the reliability of the vital statistics in Croatia-Slavonia even for 1874 and 1875.<sup>52</sup> It should further be noted that for some time to come baptized still-born in many cases were registered as live-born,<sup>53</sup> and that no official birth data for the military population are available prior to 1883.

<sup>47</sup> See League of Nations, Health Organisation, Statistical Handbooks Series: No. 10, *The Official Vital Statistics of the Kingdom of Hungary*, p. 33.

<sup>48</sup> For prior birth statistics covering part of the country see, for instance, *Tafeln zur Statistik der Österreichischen Monarchie für die Jahre 1847 und 1848*, Vols. 20 and 21, First Part, First Section, Table 3, pp. 2-3, Second Section, Table 3, pp. 2-3; *ibid.*, New Series, Vol. I (1849-1851), First Part, Table 3, pp. 2-3, 6-7, 13; Hain, Joseph, *Handbuch der Statistik des Österreichischen Kaiserstaates*, Vol. I, Vienna, 1852, p. 384.

<sup>49</sup> See *Tafeln zur Statistik der Österreichischen Monarchie*, New Series, Vol. IV, 1858-1859, First Part, Table 3, p. 54; Statistical Bureau of the Royal Dalmatia-Croatia-Slavonia Government, *Statistisches Jahrbuch* 1874, pp. XXV-XXXIII.

<sup>50</sup> See Imperial-Royal Statistical Central Commission, *Mittheilungen aus dem Gebiete der Statistik*, Vol. XIII, Second Section, p. 1; Keleti, Karl, *Skizze der Landeskunde Ungarns*, Budapest (1873), p. 80.

<sup>51</sup> See *Ungarische Statistische Mittheilungen*, Second Series, Vol. V, p. 67\*.

<sup>52</sup> See Zoričić, Milovan, *Demographische Arbeiten in den Königreichen Kroatien und Slavonien*, Report to the Sixth International Congress for Hygiene and Demography in Vienna, Agram, 1887, p. 51.

<sup>53</sup> See, for instance, *ibid.*, p. 62.

## 82 THE BALANCE OF BIRTHS AND DEATHS

For the earlier period, covering the years 1852-1869, we shall confine ourselves to giving the following table. For later years detailed data will be given both for the entire kingdom and separately for Croatia-Slavonia which now forms part of Yugoslavia

## LIVE-BORN IN HUNGARY, 1852-1869\*

Year <sup>a</sup>	Hungary Proper	Croatia-Slavonia <sup>b</sup>	Military Frontier <sup>c</sup>	Total Kingdom
1851-52	526,345	38,326	50,164	614,835
1852-53	507,434	40,049	47,351	594,834
1853-54	466,774	28,174	41,560	536,508
1854-55	482,796	33,158	41,130	557,084
1856	486,263	35,721	51,721	573,705
1857	532,230	39,009	55,057	626,296
1858	518,447		52,765	
1859	540,479		54,788	
1860			48,280	
1861			48,787	
1862			52,772	
1863		45,849	57,263	
1864	513,152	43,989	55,033	612,174
1865	531,082	41,413	54,548	627,043
1866	546,110		53,672	
1867	506,234		54,885	
1868	557,841		57,542	
1869	566,123			

\* For 1852-1865 see *Tafeln zur Statistik der Österreichischen Monarchie*, New Series, Vol. II, 1852-1854, First Part, Table 3 pp 5, 31, 57, 80, *ibid.*, Vol. III, 1855-1857, First Part, Table 3, pp 5, 31, 55, 81, 105 *ibid.*, Vol. IV, 1858-1859, First Part, Table 3, p 55, *ibid.*, Vol. V, 1860-1865, First Part, Table 3, pp 16-17. For 1866-1869, see *Statistisches Jahrbuch der Österreichisch-Ungarischen Monarchie* 1867, p 20, 1868, p 20, 1869, p 24, *Statistisches Jahrbuch für Ungarn*, Vol. II, p 33. All data refer to the civilian population only. The data for Croatia-Slavonia, 1851-52 and 1852-53 include still born. The same is possibly true of the data for Hungary proper, 1866-1869.

<sup>a</sup> The data for 1851-52 to 1854-55 refer to fiscal years ending October 31, the data for 1856-1869 to calendar years. For Nov.-Dec., 1855, the corresponding data were 73,640, 4,580, 5,440, and 83,660.

<sup>b</sup> Croatia-Slavonia, from 1849 till 1868, included the district of Fiume.

<sup>c</sup> The "military frontier" was later included in Croatia-Slavonia with the exception of a small district included in Hungary proper.

The Hungarian birth statistics became deficient in the course of the World War. So far as Croatia and Slavonia are concerned, only preliminary figures were published for 1916 and 1917 and none whatsoever for 1918.<sup>54</sup> For Hungary proper, the data were practically complete at least including September, 1918.

<sup>54</sup> See, however, p. 125 the pamphlet by Bogić, published by the Yugoslave Ministry of Public Health.

Through the Treaty of Trianon the territory of Hungary was distributed as follows:<sup>85</sup>

States	Population 1910
Hungary .....	7,590,931
Rumania .....	5,248,882
Yugoslavia .....	4,143,025
Czechoslovakia .....	3,525,169
Austria .....	303,794
Fiume .....	49,806
Poland .....	24,880
Total .....	20,886,487

Hungary thus retained only a territory with a population of 7,590,931 (1910).<sup>86</sup> The Hungarian Statistical Office has estimated the population and has computed the number of births in the present territory for each year from 1911 on. Our tables, therefore, give side by side data for the pre-war territory up to 1918 and for the post-war territory from 1911 on. The data for the pre-war territory are quite deficient for the last three months of 1918.

### Italy

The Central Institute of Statistics considers the birth statistics as complete.<sup>87</sup> They have been compiled from 1862 on, the year following the foundation of the Kingdom of Italy (March 17, 1861). Italy annexed in 1866 Venetia and Mantua, ceded by Austria; in 1870 the province of Rome; in 1920 Trento, Pola, Trieste, and Zara, ceded by Austria and Hungary; and in 1924 Fiume by agreement with Yugoslavia. The official birth statistics cover for 1863-1923 the pre-war territory, excluding, however, prior to 1872 the Province of Rome.<sup>88</sup>

In 1917 and 1918, no data could be ascertained for 234 and 236 occupied communes with a population of 1,123,975 and-

<sup>85</sup> See *Statistisches Handbuch der Čechoslovakischen Republik*, Vol. II, 1925, p. 96 \*.

<sup>86</sup> According to the official Hungarian statistics (see *Annuaire Statistique Hongrois*, New Series, Vol. XXXV, 1927, p. 6), Hungary retained a territory with a population of 7,606,971.

<sup>87</sup> See *Renseignements sur l'organisation actuelle des statistiques de l'état civil*, 1929, p. 64.

<sup>88</sup> The births were known for 1871 for the city of Rome, but not for the remainder of the province. See *Censimento 31 dicembre 1871*, Vol. II, p. 17.



887,036 respectively; but the Central Institute of Statistics has filled the gaps by estimates.

Birth statistics for the present territory have been published for each year from 1922 on, and recently also for 1913 and 1914.

### Latvia

Under the Russian régime "information regarding the movements of the population was obtained almost entirely from the clergy."<sup>60</sup> Immediately after the foundation of the republic civil registration was introduced,<sup>61</sup> but it was some years before it became universal. The birth and death statistics published for 1921 were then still incomplete.

The data on natality and mortality are not complete since the civil registration bureaus are not yet established everywhere; besides the population does not readily use them and many births are registered neither in those bureaus nor with the ministers of the more important religions to whom we owe the information on the number of births, marriages, and deaths. As regards the ministers of the small sects it is impossible to obtain from them exact data. Consequently the number of births published here is inferior to the actual number.<sup>62</sup>

The number of births reported to the Statistical Office increased from 29,434 in 1920 to 36,420 in 1921, and to 41,146 in 1922. To our question whether we may assume that the registration of live-born has been nearly complete from 1922 on, the chief of the vital statistics replied:

As to your question concerning the registration of live-born we can confirm that it is complete. The information is furnished by the clergy and the civil registration service.

### Liechtenstein

No regular birth statistics seem so far to have been compiled for the principality of Liechtenstein, which, according to her last census of December 31, 1911, had 10,716 inhabitants<sup>63</sup> and accord-

<sup>60</sup> League of Nations, Health Organisation, *Statistical Handbooks Series: No. 6, The Official Vital Statistics of the Scandinavian Countries and the Baltic Republics*, p. 102.

<sup>61</sup> See *ibid.*, p. 106.

<sup>62</sup> *Annuaire Statistique de la Lettonie* (Vol. II), 1921, p. IV; see also *ibid.* (Vol. I), 1920, p. IV; and *Statistisches Jahrbuch der Stadt Riga, 1920-1922* (German), p. 29.

<sup>63</sup> See *Annuaire International de Statistique*, Vol. I, 1916, p. 2.

ing to an estimate for 1921 about 11,500.<sup>63</sup> The only year for which the number of births has become known is 1924 with 249 live-born.<sup>64</sup>

### Lithuania

Birth registers in Lithuania proper (former Russian territory) are still exclusively kept by the clergy; civil registration exists only in the Memel territory (ceded by Germany).<sup>65</sup> According to the Lithuanian Statistical Office the information furnished by the registrars is complete.<sup>66</sup> The Office has published birth statistics for the present territory of the Republic for each year from 1915 on.

### Maltese Islands

The early birth figures published in the annual Health Reports for the Maltese Islands include stillbirths, but from 1908-09 on, the number of still-born is sometimes reported separately and from 1916-17 on, the figures comprise live-born only. For the years 1898 to 1907-08, two birth figures are published, the first covering the civil population only, the second apparently including also the "military families." For 1908-09 to 1913-14 (with the exception of 1910-11), birth figures are given separately for the civil population, the "military families," and the total population. From 1916-17 on, the birth figures apparently cover only the civil population. The birth data prior to 1902 and from 1922 on, refer to calendar years, those for 1902-03 to 1921-22 to fiscal years ending March 31.

The official population estimates refer in general to the civil population, but they sometimes include the "military families"; separate data for the "military families" are published only for a few years (1908-09 to 1913-14). The population increase during the intercensal period 1911-1921 was grossly over-estimated; the official birth rates, especially for the second half of that decade, are therefore too low.

<sup>63</sup> See *Aperçu de la démographie des divers pays du monde*, 1929, p. 18.

<sup>64</sup> See *ibid.*, p. 435.

<sup>65</sup> See *Renseignements sur l'organisation actuelle des statistiques de l'état civil*, 1929, p. 28.

<sup>66</sup> See *ibid.*, p. 64.

## BIRTHS ON THE MALTESE ISLANDS, 1895-1929\*

Year	Births incl still-born		Year	Births incl still-born		Live- born Civil Popu- lation	Year	Live- born Civil Popu- lation
	Total Popu- lation	Civil Popu- lation		Total Popu- lation	Civil Popu- lation			
1895	6,920		1907-08	8,309	8,141		1919-20	6,787
1896	6,440		1908-09	8,137	7,941	7,651	1920-21	7,813
1897	6,919		1909-10	7,787	7,616	7,360	1921-22	7,538 <sup>d</sup>
1898	6,932	6,744	1910-11	7,707			1922	7,958
1899	6,617	6,429	1911-12	7,211 <sup>c</sup>	<sup>c</sup>	<sup>c</sup>	1923	7,600
1900	7,144	6,937	1912-13	6,977	6,802	6,516	1924	7,729
1901	7,110	6,968	1913-14	7,163	6,957	6,742	1925	7,504
1902-03 <sup>a</sup>	7,480	7,287	1914-15	6,953			1926	7,488
1903-04	7,425	7,173	1915-16	6,729			1927	7,467
1904-05	8,177	7,955	1916-17			6,710	1928	7,327
1905-06	8,342	8,126	1917-18			6,337	1929	7,743
1906-07	8,074 <sup>b</sup>	7,633	1918-19			6,398		

\* See for 1895-1901 *Report of the Public Health Department, 1895*, p III, *ibid*, 1896, p VII, *ibid*, 1897, Appendix A *ibid*, 1898, App A, D *ibid*, 1899, App B, E *ibid*, 1900, App A, D, *ibid*, 1901, App A, D. See for 1902-03 to 1910-11, total population, *Census of the Maltese Islands 1911*, p VIII civil population, *Report 1902-03*, App A, *ibid*, 1903-04, p VII, *ibid*, 1904-05, p XIV, *ibid*, 1905-06, p XIV, *ibid*, 1906-07, p XVI, *ibid*, 1907-08, p XII, *ibid*, 1908-09, p I, *ibid*, 1909-10, p 12, *ibid*, 1910-11, p 10. See for 1911-12 to 1929 *Report, 1911-12*, p I, *ibid*, 1912-13, p VI, *ibid*, 1913-14, p X, *ibid*, 1914-15, p I, *ibid*, 1915-16, p I, *ibid*, 1916-17, p I, *ibid*, 1917-18, p I, *ibid*, 1918-19, p I, *ibid*, 1919-20, p I, *ibid*, 1920-21, p I, *ibid*, 1921-22, p III, *ibid*, 1922, p I, *ibid*, 1923, p I, *ibid*, 1924, p I, *ibid*, 1925, p I, *ibid*, 1926, p I, *ibid*, 1927, p I, *ibid*, 1928, p I, *ibid*, 1929, p I.

<sup>a</sup> Jan. 1, to March 31, 1902 2,206 and 2,153 respectively. See *Report for January, February and March 1902*, Appendices A, E.

<sup>b</sup> According to *Report 1906-07*, p XII, 7,819.

<sup>c</sup> April 3, 1911 to March 31, 1912 7,189, 7,130, and 6,776 respectively. See *Report, 1911-12*, p V.

<sup>d</sup> Calendar year 1921 7,688. See *Report 1922*, p II.

## POPULATION, BIRTHS, AND BIRTH RATES ON THE MALTESE ISLANDS, 1898-1929

Period <sup>a</sup>	Mean Population <sup>b</sup> (in thousands)	Yearly Births <sup>c</sup>	Birth Rate
1898-1901	181	6,770	37.4
1902-1906 <sup>d</sup>	197	7,681	39.0
1908-1913 <sup>e</sup>	212	7,013	33.1
1916-1919 <sup>f</sup>	212	6,558	30.9
1920-1921 <sup>g</sup>	213	7,676	36.0
1922-1923	217	7,779	35.9
1924-1925	221	7,617	34.5
1926-1928	226	7,427	32.9
1929	230	7,743	33.7

<sup>a</sup> Calendar years, unless otherwise stated.

<sup>b</sup> Estimated on the basis of the census data and the official intercensal estimates.

<sup>c</sup> 1898-1906 including still-born. 1908-1929, live-born.

<sup>d</sup> Jan. 1, 1902, to March 31, 1907.

<sup>e</sup> April 1, 1908, to March 31, 1910, and April 3, 1911 to March 31, 1914.

<sup>f</sup> April 1, 1916, to March 31, 1920.

<sup>g</sup> April 1, 1920, to March 31, 1922.

The first table on page 86, which must be accepted with due reserve, gives an abstract of the births on the Maltese Islands for 1895-1929, that is, for the entire period covered by the Health Reports.

The second table shows birth rates for the civil population.

### Monaco

The population of the principality of Monaco increased from 19,100 in 1910 to 23,000 on December 31, 1913, decreased to 16,000 on December 31, 1918, and rose to 25,000 on January 1, 1928. According to information furnished to the International Statistical Institute, the number of births was as follows: <sup>a</sup>

1910.....	356	1916.....	204	1922.....	368
1911.....	390	1917.....	160	1923.....	338
1912.....	382	1918.....	158	1924.....	400
1913.....	453	1919.....	194	1925.....	382
1914.....	430	1920.....	375	1926.....	452
1915.....	290	1921.....	377	1927.....	413

The birth rate was all the time very low. It never exceeded 20 and was only 10 in the last war years.

### Poland

The situation has been stated officially in 1929 as follows:

The manner of making the acts of civil status is not yet uniform in Poland. So far, in each province (voivodship) of the republic the regulations of that state remain in force of which the province constituted a part before the war.

In the old Congress kingdom <sup>a</sup> there still prevails the civil code of the Kingdom of Poland which provided that the acts of civil status be made by the clergy, except for persons adhering to non-Christian denominations or Christian denominations not recognized and not registered by the state. The acts of civil status of those persons are made by the municipal and communal organs or by the police (Warsaw) in conformance with an 1830 decree of the old Administrative Council of the Kingdom of Poland. The control of those acts is committed to the judicial authorities.

<sup>a</sup> See *Aperçu annuel de la démographie des divers pays du monde*, 1922, p. 32; *ibid.*, 1929, p. 141.

<sup>a</sup> The kingdom created at the Vienna Congress of 1815. A small part of it has been ceded to Lithuania; the bulk of it, together with a small district formerly belonging to Russia proper, constitutes the central provinces of the Polish Republic.

In the eastern provinces, the acts of birth are made by the clergy, and the tenth volume of the Collected Laws of the Russian Empire grants them the value of vouchers, without giving details.

In the former Austrian Poland it is likewise the clergy who take charge of the registers of civil status; the manner of registration is set down by the Austrian law of 1874. The municipal and communal organs take charge only of the acts of civil status of persons adhering to non-Christian denominations and of persons not professing any religion.

It is only in the former Prussian Poland that acts of civil status are made by the civil officers according to the law of 1875 of the German Empire. This is done under the direction of the administrative authorities.<sup>68a</sup>

Birth registration has been complete for more than 50 years in the districts ceded by Prussia which now practically constitute the western provinces of Poland.<sup>69</sup> It is less satisfactory in the central provinces, in the southern provinces (former Austrian Poland or Galicia), and in the eastern provinces (formerly belonging to Russia proper). Birth registration is here frequently delayed<sup>70</sup> and is particularly incomplete for the Jewish births in the central and eastern provinces;<sup>71</sup> in the southern provinces part of the still-born are registered as live-born dead before registration.<sup>72</sup>

The collection of birth statistics was quite inadequate in the first years after the establishment of the republic. This is even true of the former Prussian territory. As late as December, 1922, the Central Statistical Office reports:

The materials in question reached the office with great delay and showed gaps and inaccuracies which caused a prolonged correspondence. . . . The materials relating to the year 1919 are too fragmentary for publication since in that year of transition

<sup>68a</sup> *Renseignements sur l'organisation actuelle des statistiques de l'état civil*, 1929, p. 30

<sup>69</sup> The western provinces comprise the provinces of Poznań, Pomorze, and Silesia; a small part of the present Polish province of Silesia, namely the district of Teschen, was ceded by Austria.

<sup>70</sup> See, for instance, *Revue Trimestrielle de Statistique de la République Polonaise*, Vol. VII, 1930, pp. 195-196.

<sup>71</sup> See, for instance, *Revue Trimestrielle*, Vol. VI, 1929, p. 384; *Informations Statistiques de l'Office Central de Statistique*, Vol. IX, 1931, p. 306. The 1930 birth rates of the various religious denominations in the republic were as follows: Roman-Catholics 33.3, Greek-Catholics 34.7, Orthodox 36.0, Protestants 23.0, Jews 21.0. (See *ibid.*, p. 307.)

<sup>72</sup> See *Revue Trimestrielle*, Vol. VII, 1930, p. 250.

the civil registration officers sent their reports to Berlin or made none at all not knowing to whom they should be furnished. All the attempts of the office to complete them have unfortunately failed.<sup>13</sup>

Improvement in the other provinces was very slow.

The vital statistics of the population established by the Central Statistical Office are at present confined to the data relating to the former Prussian provinces where the acts of civil status are made by the civil officers. In all the other provinces of Poland, the books of civil status are kept by the clergy and it has so far been impossible for us to obtain regularly the data basic for the vital statistics of the population of those provinces.<sup>14</sup>

For the southern provinces the first birth statistics were published in 1928, and for the central and eastern provinces in 1929. Those statistics covered all the years from 1919 on, and in 1929 birth figures from 1919 on were also published for the entire republic. But none of those data should be considered as complete.

There exist also some birth data for prior years<sup>15</sup> which,

<sup>13</sup> *Revue Mensuelle de Statistique de la République Polonaise*, Vol. V, 1922, p. 725 \*. See also *ibid.*, Vol. VI, 1923, p. 151 \*.

<sup>14</sup> *Revue Trimestrielle*, Vol. I, 1924, Nos. 2-3, p. I.

<sup>15</sup> *Confronti Internazionali 1865-1883*, pp. XCIX, CCI, CCIII, give the population, the live-born, and the birth rates of Congress Poland for each year from 1865 to 1877 and for 1879. The data have been furnished to the Italian Statistical Office by the director of the Serbian Statistical Office.

Szule, Stefan, "Appréciation des données statistiques relatives à l'état de la population de l'ancien Royaume de Pologne," *Contributions à la statistique de l'ancien Royaume de Pologne*, published by the Central Statistical Office of the Polish Republic, Vol. I, pp. 213-214, gives the legal population of Congress Poland on December 31, 1819 to 1897, and the civilian population of Congress Poland on January 1, 1897 to 1913. (The military population, including their families, according to the census of 1897, amounted to as much as 253,229 or 2.7 per cent. See *ibid.*, p. 95.)

Bornstein, Benedykt, "Analyse critique des données statistiques concernant le mouvement naturel de la population de l'ancien Royaume de Pologne," *Revue Mensuelle*, Vol. I, 1920, pp. 228, 233-234, gives the births in Congress Poland in thousands by decades for 1871-1910 and the average yearly population, the yearly births, and the yearly birth rates for 1891-1912.

*Statistique de Pologne*, Vol. III, p. 2, gives the yearly births of the Christian population in Congress Poland for 1909-1918, excluding the Orthodox (Russian) population and excluding also the four northern districts ceded to Lithuania.

however, for the central and eastern provinces, are still less accurate than the more recent ones. They were there even much more deficient than in the rest of European Russia.<sup>a</sup> Mr Stefan Szule,

## POPULATION, BIRTHS, AND BIRTH RATES IN POLAND, 1865-1929

Period	Mean Population (In thousands)	Yearly Births	Birth Rate	Period	Mean Population (In thousands)	Yearly Births	Birth Rate
Central Provinces				Western Provinces			
1865		251,716		1880-1881		154,921	41.8
1866-1870	5,521	251,604	45.6	1909-1912		148,274	38.7
1871-1880	6,436	272,000	42.8	1913-1914		88,361	
1881-1890	7,543	313,000	41.5	1915-1918		125,356	31.0
1891-1895	8,644	378,020	43.7	1919-1921	4,041	134,544	33.0
1896-1900	9,414	412,692	44.9	1922-1926	4,076	124,780	29.1
1901-1905	10,323	434,674	42.1	1927-1929	4,289		
1906-1910	11,219	440,041	39.2	Southern Provinces			
1911-1912	11,882	440,524	37.1				
1911-1912		357,317 <sup>a</sup>		1881-1882			42.6
1913-1914		332,867 <sup>a</sup>		1909-1912		319,036 <sup>b</sup>	39.1
1915-1918		223,908 <sup>a</sup>	27.2 <sup>a</sup>	1919-1921	7,516	233,418	31.1
1919-1921	11,200	370,896	33.1	1922-1926	7,818	273,945	35.0
1922-1926	12,009	409,991	34.1	1927-1929	8,147	259,546	31.9
1927-1929	12,670	404,042	31.9	Republic			
Eastern Provinces							
1882-1883			45.7	1881-1882			41.9
1909-1912			35.3	1909-1912			37.4
1919-1921	4,034	123,445	30.6	1919-1921	26,790	853,115	31.8
1922-1926	4,683	186,304	39.7	1922-1926	28,595	1,004,784	35.1
1927-1929	5,090	188,232	37.0	1927-1929	30,197	976,600	32.3

<sup>a</sup> Christian population except Orthodox

<sup>b</sup> Excluding the county of Sêpes-Arva

*Revue Trimestrielle*, Vol IV, 1927, p 346, gives the births in the western provinces for the period 1909-1912 and for each year from 1913 on

*Revue Trimestrielle*, Vol V, 1928, p 164, gives the births in the southern provinces for the period 1909-1912

*Annuaire Statistique de la République Polonaise*, Vol VII, 1929, p 14, gives the birth rates in the central provinces (Congress Poland), the western, the southern, and the eastern provinces as well as in the entire republic for the biennial period 1880-1881, for the quadriennial period 1909-1912 and in Congress Poland also for the quadrennial period 1915-1918

<sup>a</sup> See Novosselsky, S, "Organisation und Hauptergebnisse der amtlichen Bevölkerungs- und Medizinalstatistik in Russland," *Archiv für Soziale Hygiene und Demographie*, Vol X, 1915, pp 21-23

the chief of the vital statistics division of the Central Statistical Office, in a letter to the author, stated:

It should be mentioned that the pre-war demographic data about the former Russian Poland are to a high degree uncertain. The errors are due in part to incomplete registration especially of births, in part to uncritical collection and compilation of the data through the respective—mostly non-statistical—authorities. On the other hand, the population figures also are in part very inaccurate in that after the census of 1897 they, as a rule, become strongly and in later years ever increasingly exaggerated so that they may convey a wrong impression of too low and of falling birth and death rates.

For the earlier period, we shall, therefore, confine our comment to an abstract, with due reserve, adding some more recent data for the convenience of the reader (see table on page 90).

### Portugal

"Registration of births and marriages was entrusted to the clergy up to the time of the proclamation of the Republic" (October, 1910). "It was not until the passing of the Law of February 18th, 1911, that registration became generally compulsory, and failure to observe the registration regulations became a punishable offence against the State."<sup>76</sup> All birth statistics prior to 1911 are, therefore, incomplete. Such statistics have been published for 1818, 1838, 1843, 1849-1851, 1860-1862, 1871-1872, 1875, and for each year from 1886 on. Prior to 1886 they comprised merely the Catholic baptisms. They thus excluded all Protestant and Jewish children as well as the Catholic children who had died too young to be baptized; but they included the baptisms of older children and adults.<sup>78</sup>

"The registration among non-Catholics was regulated by the civil registration law of 1886,"<sup>77</sup> and since 1900 all registers were

<sup>76</sup> League of Nations, Health Organisation, Statistical Handbooks Series No. 7, *The Official Vital Statistics of the Republic of Portugal*, p. 23. See also *Anuário Demográfico*, 1929, p. V.

<sup>77</sup> The figure for 1862 (127,202) thus included 5,208 children born in 1861, 149 children born in prior years, and 62 adults. See Pery, Gerardo A., "Mouvement de la population en Portugal," *Annales de Démographie Internationale*, Vol. I, 1877, p. 503; see also by the same author *Statistique du Portugal et de ses colonies*, Second Edition, Vol. I, p. 142.

<sup>78</sup> *The Official Vital Statistics of the Republic of Portugal*, p. 23.



kept in the custody of the civil authorities.<sup>50</sup> But birth statistics remained quite deficient. They became fairly complete only after the law of 1911 had come into force.<sup>51</sup> The following abstract for the earlier period will doubtless suffice.

POPULATION, BIRTHS, AND BIRTH RATES IN PORTUGAL, 1818-1911

Period	Mean Population <sup>a</sup> (In thousands)	Yearly Births <sup>b</sup>	Birth Rate
1818.....		100,310	
1838.....	3,224	99,097	30.7
1843.....		107,074	
1849-1851.....	3,555	111,006	31.2
1860-1862.....	3,898	123,893	31.8
1871-1872.....	3,995	127,968	32.0
1875.....	4,050	140,094	34.6
1886-1890.....	4,946	163,724	33.1
1891-1895.....	5,143	159,146	30.9
1896-1900.....	5,330	161,051	30.2
1901-1905.....	5,545	177,280	32.0
1906-1910.....	5,789	177,140	30.6
1911.....	5,936	230,023	38.8

<sup>a</sup> For 1838 census figure of that year; see Bertillon, p. 30. For 1849-1910 computed from the estimated population of December 31, 1849-1851, 1860-1863, 1870-1872, 1875, 1886-1911, given in Pery, *Mouvement*, p. 497; Pery, *Statistique*, p. 133; *Anuário Estatístico de Portugal*, 1919, p. 58.

<sup>b</sup> Taken from Pery, *Statistique*, pp. 142, 149; *Anuário Demográfico (de Portugal)* 1929, p. 6.

### Rumania

Birth statistics covering the whole country have been collected since the union of the two Rumanian principalities, Moldavia and Valachia, in 1859.<sup>52</sup> They were at first based on the records of the various ecclesiastical consistories, but from 1866 on, when the Rumanian Civil Code went into force, registration was committed to the municipal authorities. The statistics based on the reports from the clergy are said to have been rather inadequate.<sup>53</sup>

<sup>50</sup> See *ibid.*, and *Renseignements sur l'organisation actuelle des statistiques de l'état civil*, 1929, p. 30.

<sup>51</sup> In 1911, evidently many births of former years were registered, so that the figure for that year is too high.

<sup>52</sup> For prior birth statistics in Valachia, see *Annale Statistique pentru cunoștința părții muntene din România*, Vol. I, No. 1, p. 26.

<sup>53</sup> See Colesco, L. (Director of the Rumanian Statistical Office), *Population de la Roumanie*, Demographical abstract submitted to the 1903 session of the International Statistical Institute, p. 32.

In any case it is not certain whether and to what extent the birth figures included still-born. From 1866 on, still-born had to be registered as such and were to include not only children born dead but, as in France, also children born alive and dying within three days of birth (before registration).<sup>84</sup> The birth statistics seem to have remained defective for some years more. But after 1870 or 1872 they became more reliable and from 1900 on were practically complete.<sup>85</sup>

On the other hand, the available population data to which to relate the birth data were most of the time rather unsatisfactory. The censuses of 1859 and 1899 revealed a population of 3,864,848 and 5,956,690 respectively. The increase of 2,091,842 is accounted for to the extent of 1,762,286 by the excess of births over deaths. In estimating the yearly population for this 40 years' interval, the Rumanian Statistical Office has taken account of the difference of 329,556 by assuming an excess of immigrants over emigrants amounting to 8,239 for each year. But the census figure of 1859 probably understated the population,<sup>86</sup> and there has moreover

<sup>84</sup> See Crupenski, C. (Director of the Rumanian Statistical Office), "Notice sur l'état démographique de la Roumanie d'après le mouvement de la population," *Bulletin de l'Institut international de statistique*, Vol. IX, Second Part, Reports to the 1895 Session, pp. 31-32.

<sup>85</sup> See *Statistique Internationale du mouvement de la population*, Vol. I, p. 64; Colesco, pp. 32-33, 38; *Bulletin Statistique de la Roumanie*, Vol. V, 1900-1901, pp. 159-160, Vol. VI, 1902-1903, p. 22, Vol. VIII, 1904-1905, p. 55, (Vol. X), 1909-1910, pp. 121, 383, Vol. XI, 1911-1912, p. 259, Vol. XII, 1913-1915, p. 173.

<sup>86</sup> The Rumanian Statistical Office in 1909 (see *Annuaire Statistique de la Roumanie*, 1909, p. 19) stated: "This figure [3,864,848] has been considered as being too low even by the statistical office which had directed the census operations and which proposed to increase it by at least 28 per cent in order to make it correspond to reality." As a matter of fact, the Statistical Office (see *Annale Statistice pentru cunoscintia României*, Vol. VI, 1865, p. 7) had not proposed to increase the population figure for the entire country (3,864,848) by at least 28 per cent, but "had gained the conviction that at the census taken in Moldavia in the year 1859-60 more than 28 per cent of the actual number of people had not been counted" and had therefore proposed to increase the census figure for Moldavia in the proportion of 72 : 100, that is from 1,463,927 to 2,024,040, thus reaching a total of 4,424,961 for the entire country, or about 14 per cent more than the census had shown. This estimate of 4,424,961 for 1859 and a corresponding official estimate of 5,376,000 for 1879 have indeed internationally been accepted and unbelievably low birth rates been derived therefrom (see *Confronti Internazionali*, 1865-1883, p. CCIII; *Statistik des Deutschen Reichs*, New Series, Vol. 44, pp. 66, 70). But those official estimates were doubtless grossly

occurred a change of territory in 1879 through the Treaty of Berlin."

For the period from 1900 to 1912, the Rumanian Statistical Office computed the population by adding the excess of births over deaths, but it emphasized repeatedly that the results lagged considerably behind the truth in view of a large excess of immigration over emigration, amounting in 1905-1911 alone to 178,051.<sup>88</sup> The census of December 19, 1912, it is true, revealed an increase of population which corresponded almost exactly to the excess of births over deaths. Yet "it is certain that the increase of population would have been larger . . . if the Balkan war had not broken out in the fall [of 1912] . . . and caused the emigration of a considerable number of Bulgarians, Serbs, Albanians, Turks, and of citizens of other foreign nationalities, many of whom had settled long ago in Rumania."<sup>89</sup> It is therefore quite probable that the official population estimates were too low for the first part of the period 1860-1899 and for the latter part of the period 1900-1912.

exaggerated. The estimate of 2,024,040 for Moldavia 1859 in particular was far too high, since Moldavia—excluding Bessarabia which according to the census of 1859 had 138,521 inhabitants—counted only 1,848,122 in 1899. Moreover, if Rumania actually had 4,424,961 inhabitants in 1859 and 5,956,690 in 1899, either the excess of births should have been smaller than shown in the records or there should have been an excess of emigration. Since each of these assumptions seems quite unlikely we are inclined to believe that the population in 1859 was actually not much higher than shown by the census.

<sup>87</sup> Rumania ceded Bessarabia to Russia and annexed Dobrudja from Turkey. Bessarabia, according to the census of 1859, had 138,521 inhabitants. Colesco, in 1903, (p. 9) estimated their number for 1879 at 163,000. As to the population of Dobrudja in 1879, Colesco (*ibid.*) estimated it at approximately 169,000, but some years later (*Progrès de la Dobrodja depuis l'annexion jusqu'à aujourd'hui, 1878-1906*, p. 5) gave 147,246 as the population for 1880. Levasseur and Bodio (see *Bulletin de l'Institut international de statistique*, Vol. XII, Second Part, p. 84), for 1879 estimated it at 258,242 and the German Statistical Office (see *Statistik des Deutschen Reichs*, New Series, Vol. 44, p. 70) at rather less than 100,000. Since Dobrudja in 1899 had 267,808 inhabitants, the estimate of the German Statistical Office was certainly far too low and that of Levasseur and Bodio certainly far too high. In view of the large excess of births in Dobrudja between 1880 and 1899 Colesco's estimates seem plausible, the actual population of Dobrudja in 1879 probably being nearer to 169,000 than to 147,000. The change in frontiers then very likely did not involve an essential change in the total population.

<sup>88</sup> See *Bulletin Statistique*, Vol. XI, 1911-1912, p. 650; see also *ibid.*, p. 262, and (Vol. X) 1909-1910, pp. 123-124, 384.

<sup>89</sup> See *Bulletin Statistique*, Vol. XII, 1913-1915, p. 431.

Through the Treaty of Bucharest, in 1913, Bulgaria ceded to Rumania Southern Dobrudja with 273,090 inhabitants. This territory is included for 1914 and 1915 in the official Rumanian birth statistics. For 1916 no birth statistics whatsoever have been compiled and for 1917 data were published only for 13 provinces of Moldavia. The gaps are due to the fact "that in the part of the country occupied during those two years by the enemy armies, it was impossible to collect statistical data and that in various localities even the normal registration of the civil status acts has not been effected."<sup>80</sup>

For 1918, the collection of the birth statistics was largely delayed and "the data concerning the old and the new Dobrudja are not included since the civil status registers and the statistical schedules of this province have been destroyed by the Bulgarian army so that it is impossible to furnish for that year for the trans-Danubian part of the country other data than those relating to the towns of Chilia-Veche and Salina, the only towns which were not occupied."<sup>81</sup> The population of the territory thus comprised has been estimated at 6,504,121 for December 31, 1918, and the Rumanian Statistical Office, by relating to this figure the 103,072 births registered for that area in 1918 obtains a birth rate of 15.8.<sup>82</sup>

For 1919, the birth statistics comprise the old kingdom within the limits of 1915 and also Bessarabia (1919 about 2,500,000 inhabitants) ceded by Russia. From 1920 on, they refer to the present territory of Rumania and thus include also Transylvania, etc. (1920: 5,114,000 inhabitants) ceded by Hungary, and Bukovina (1919: 812,000) ceded by Austria.

Since the demographic conditions of the old kingdom differ greatly from those of most of the territories annexed through the peace treaties, we shall give here, at least for 1919-1922, a summary of the birth statistics in the old kingdom.

<sup>80</sup> Jonescu, N. T., "Mouvement de la population de la Roumanie en 1918," *Bulletin Statistique*, Vol. XV, 1920, p. 394.

<sup>81</sup> *Ibid.*, p. 395.

<sup>82</sup> See Jonescu, N. T., "Mouvement de la population dans l'ancien Royaume de Roumanie et en Bessarabie pendant l'année 1919," *Bulletin Statistique*, Vol. XV, 1922, No. 8, p. 33.

Year	Mean Population <sup>a</sup> (in 1,000)	Births <sup>a</sup>	Birth Rate
1919 .....	7,177	285,579	39.8
1920 .....	7,361	258,759	35.2
1921 .....	7,568	299,246	39.5
1922 .....	7,703	309,615	40.2

The early birth statistics of Rumania are not complete enough to be included in our general tables. We shall, therefore, confine ourselves to giving for 1859-1872 the following abstract:

POPULATION, BIRTHS, AND BIRTH RATES IN RUMANIA, 1859-1872

Period	Mean Population <sup>a</sup> (In thousands)	Yearly Births <sup>b</sup>	Birth Rate
1859.....	.....	114,361	....
1860.....	3,891	123,997	31.8
1861-1865.....	4,030	134,307	33.3
1866-1870.....	4,186	138,517	33.1
1871-1872.....	4,327	142,047	32.8

<sup>a</sup> Computed on the basis of the estimates for December 31, 1859-1872, published in *Résultats définitifs du dénombrement de la population (de la Roumanie)*, 1899, p. XIX.

<sup>b</sup> Taken for 1859-1865 from *Buletin Statistic General al României*, Vol. I, 1892, p. 144; for 1866-1869 from *Analele Statistice ale României*, Vol. VII, 1866, First Part, p. 2, Vol. VIII, 1867, p. 2, Vol. IX, 1868, p. 2, Vol. X, 1869, p. 2; for 1870-1872 from *Mouvement de la population de la Roumanie en 1899*, p. IV.

It should, however, be borne in mind that while the birth statistics themselves were satisfactory for later years, the population data to which to relate the births remained inadequate. This is also true for post-war years inasmuch as Rumania has taken no census since 1912.

### Russia

Dr. S. Novosselsky, at that time chief of the statistical division of the medical general inspection in the Russian Ministry of the Interior, described in 1914 the origin and development of birth registration and birth statistics in Russia (excluding Finland and Poland) as follows:

The main source for the vital statistics in Russia are the ecclesiastical registers kept by the clergy.

<sup>a</sup> Estimated on the basis of the data given in *Bulletin Statistique*, 1922, No. 8, pp. 32-33, 1923, No. 1, p. 127, 1924, No. 1, p. 51.

<sup>b</sup> See *Bulletin Statistique* 1922, No. 8, p. 33; *Annuaire Statistique* 1929, p. 34.

statistical committees the lists established by communes. The local committees, on the basis of those communal lists, prepare summary lists for whole cities and counties and transmit them to the Statistical Central Committee for further working over. On the basis of those data, the Statistical Central Committee from 1867 on, published each year detailed vital statistical data for all denominations of the 50 provinces of European Russia.<sup>97</sup>

In recent times, the Statistical Central Committee has tried to exploit in detail the data for some provinces of Siberia, namely the provinces of the Yenisei (for 1902-1904), Tobolsk (1902-1903), Semipalatinsk (1903), and Irkutsk (1904).<sup>98</sup>

Vital statistics in Russia are in a rather unsatisfactory state. Matters stand best in the 50 provinces of European Russia, especially for the Orthodox population. In Asiatic Russia, vital statistics are almost entirely lacking especially for the non-Christian denominations, and the existing data constitute fragmentary, extremely scanty information. This refers in particular to the nomadic people—Kirghiz and Kalmyks.

Registration for the sectarians and Old-Believers was also until 1905 kept in a manner by no means satisfactory. It is still hard to determine in how far this registration has improved after having passed since 1905, into the hands of the clergy of the sectarian and Old-Believers' communions.

The ecclesiastical entries register in fact not the births and deaths as such but the ecclesiastical facts (baptism, burial). The still-born and those dying unbaptized are, therefore, as a rule not registered. So far as the children dead without baptism are concerned, their omission in the number of the born is noticeable rather with the non-Orthodox than with the Orthodox since the latter, in accordance with the religious requirements, hurry to baptize weak and sickly children out of fear that they may die unbaptized.

Worst of all in European Russia, as also in Poland (next to the sectarians already mentioned), is the keeping of the birth and death registers among the Jews. It is a very characteristic circumstance that registration is particularly incomplete for the female sex.<sup>99</sup> The deficient registration of live-born girls among the Jews is evident first from the abnormally great excess of boys among the live-born, which, for instance in 1900-1904, amounted to 127.72.<sup>100</sup> That among the Jews the live-born girls very often

<sup>97</sup> *Ibid.*, p. 20.

<sup>98</sup> *Ibid.*, pp. 20-21.

<sup>99</sup> For similar conditions in the province of Quebec, see Kuczynski, R. R., *Birth Registration and Birth Statistics in Canada*, p. 56. For Bulgaria, see p. 70, above.

<sup>100</sup> The number of male per 100 female births in 1900-1904 amounted to 104.90 for the Orthodox, 105.48 for the Protestants, 104.59 for the Roman-Catholics, 105.45 for the Mahometans, and 127.72 for the Jews. (See Novo-sel'ky, p. 38.)

are not entered on the ecclesiastical registers is moreover evident from the fact that in the census of January 28, 1897, the number of Jewish girls under one year in the 50 provinces of European Russia amounted to 55,890 while the number of Jewish girls born from February 1, 1896, to February 1, 1897, was given as only 52,711. For the Jewish boys more normal conditions prevail: the number born from February 1, 1896, to February 1, 1897, is given as 70,386, the number of boys under one year according to the census being 58,283.<sup>101</sup>

There should be mentioned still another possible source of inaccuracies connected with the system prevailing in Russia for the statistical accounting of the population movement. It consists in the fact that the clergy itself makes the extracts from the registers of baptisms, marriages, and deaths and prepares highly complicated statistical tables. Taking into consideration that the clergy, which is greatly absorbed in the fulfilment of its immediate tasks, regards the preparation of the tables as a useless burden, the possible occurrence of errors and omissions therein seems quite natural.<sup>102</sup>

On the other hand, the available population data to which to relate the birth data were likewise practically all the time rather unsatisfactory. No census was taken prior to 1897 and the ten so-called "fiscal revisions," the first effected in 1718-1724 and the last in 1857-1858, afforded no adequate substitute since their main object was to cover the tax-payers.<sup>103</sup> Nor was any census taken by the tsarist government after 1897 so that as time went on the various official population estimates became more and more divergent and uncertain.<sup>104</sup>

The only existing birth statistics prior to 1867 are those published by the Supreme Procurator of the Most Holy Synod. They are confined to the Greek-Orthodox population but cover the whole Russian Empire. They have been summarized for each year from 1801 to 1866 in a paper submitted in 1899 to the International Statistical Institute by B. Pokrovsky, chief of the statistical bureau of the Russian Customs Department, who for each

<sup>101</sup> *Ibid.*, pp. 21-22.

<sup>102</sup> *Ibid.*, p. 23. For deviations as to the preparation of those tables in some provinces and cities, see *ibid.*

<sup>103</sup> See *ibid.*, p. 3, and Roesle, E., "Die Entwicklung der Bevölkerung in den Kulturstaaten in dem ersten Jahrzehnt dieses Jahrhunderts," *Archiv für Soziale Hygiene und Demographie*, Vol. XII, 1917, pp. 83-85.

<sup>104</sup> See Novosselsky, p. 3, and Roesle, pp. 86-89, 94-97, 275-278, 284-288, 292-293, 301-304, 309-316, 323-325.

year also gave the estimated number of inhabitants and the birth rate.<sup>306</sup> The birth figures, although excluding the children who died unbaptized, were probably fairly complete; but the population figures were quite uncertain.

A comparison of Pokrovsky's population figures of the Greek-Orthodox population with those published for the total population in *Annuaire Statistique de la Russie*, Vol. VIII, 1911, p. 120, would indicate that the Greek-Orthodox in 1801-1866 constituted about 70 or 75 per cent of the total population. But the population figures for the non-Orthodox were very likely still more uncertain than those for the Orthodox. It may, however, be incidentally mentioned that at the census of 1897, the Orthodox actually constituted 69.3 per cent of the total population and that in consequence of the expansion of the Russian Empire in Asia the proportion of non-Orthodox must have increased in the decades preceding the census of 1897.

The following table gives an abstract of Pokrovsky's summary:

POPULATION, BIRTHS, AND BIRTH RATES OF THE ORTHODOX POPULATION  
IN THE RUSSIAN EMPIRE, 1801-1866

Period	Population (In thousands)	Yearly Births	Birth Rate
1801-1805.....	27,472	1,294,011	47.0
1806-1810.....	29,626	1,342,219	45.2
1811-1815.....	31,148	1,253,929	40.2
1816-1820.....	33,327	1,503,935	45.1
1821-1825.....	35,967	1,614,221	44.8
1826-1830.....	38,544	1,805,621	46.8
1831-1835.....	40,684	1,879,744	46.1
1836-1840.....	43,184	2,124,090	49.1
1841-1845.....	45,406	2,281,121	50.2
1846-1850.....	47,511	2,412,161	50.7
1851-1855.....	49,722	2,520,872	50.6
1856-1860.....	52,386	2,693,794	51.4
1861-1865.....	55,920	2,987,818	53.4
1866.....	57,594	2,686,965	46.6

For 1867-1914, birth statistics covering the entire population have been published for the 50 provinces of European Russia proper (with the exception of the Kirghiz and Kalmyk steppes

<sup>306</sup> See *Bulletin de l'Institut international de statistique*, Vol. XI, 1899, Section 1, Part II, pp. 185-187.



in the province of Astrakhan, which in 1897 had a population of 343,369<sup>106</sup>). They are probably fairly complete for the Orthodox but not so for the other denominations, and especially not for the Jews. Since, however, the Orthodox constituted all the time 80 per cent or more of the total population of that territory (in 1897 actually 82 per cent) the gaps in the statistics of the other denominations do not seriously affect the totals. In 1896-1897, the official birth rate of the Orthodox was thus 53.1, while for the Mahometans it was 48.3, for the Roman-Catholics 37.9, for the Jews 32.1, and for the Protestants 32.0.<sup>107</sup> But the official birth rate for the total population was 50.1. Since the actual birth rate of the Orthodox very likely was somewhat higher than for the rest of the population, the gaps in the birth statistics for the other denominations cannot have influenced the totals by more than a few per cent.<sup>108</sup>

The compilation and publication of the vital statistics always lagged considerably behind. The final report for 1905 was pub-

<sup>106</sup> See Novosselsky, p. 24.

<sup>107</sup> See *ibid.*, p. 37.

<sup>108</sup> It may be incidentally mentioned that the 50 provinces covered by those statistics comprised almost three-fourths of the population and almost one-fourth of the territory of the Russian Empire (including Poland).

The birth statistics of the ten Vistula provinces (Poland) have already been discussed (see pp. 87-91). There exist in addition for 1892-1911 some birth statistics for the Caucasus and for Siberia which, however, are of doubtful value. Although those areas do not belong to Europe, we may insert the following abstract:

POPULATION, BIRTHS, AND BIRTH RATES IN THE CAUCASUS AND IN SIBERIA, 1892-1911

Period	Caucasus			Siberia		
	Mean Population <sup>a</sup> (In thousands)	Yearly Births <sup>b</sup>	Birth Rates	Mean Population <sup>a</sup> (In thousands)	Yearly Births <sup>b</sup>	Birth Rates
1892-1896	.....	327,166	....	.....	249,869	....
1897-1901	9,610	357,400	37.2	6,030	301,278	50.0
1902-1906	10,380	405,605	39.1	6,650	329,052	49.9
1907-1911	11,575	453,338	39.2	8,245	446,535	54.2

<sup>a</sup> Estimated on the basis of the population figures of the Russian Statistical Central Committee and the Russian Medical Department quoted in Roesle, pp. 310, 314, and the birth and death figures published in Novosselsky, p. 24.

<sup>b</sup> See Novosselsky, p. 24.

## 102 THE BALANCE OF BIRTHS AND DEATHS

## POPULATION, BIRTHS, AND DEATHS IN 50 PROVINCES OF EUROPEAN RUSSIA, 1867-1914

Year	Mean Population <sup>a</sup> (In thousands)	Births <sup>b</sup>	Deaths <sup>b</sup>	Year	Mean Population <sup>a</sup> (In thousands)	Births <sup>b</sup>	Deaths <sup>b</sup>
1867	62,550	3,201,340	2,299,165	1891	80,480	4,372,419	3,095,552
1868	63,400	3,093,087	2,517,035	1892	87,679	4,033,402	3,596,585
1869	63,950	3,178,970	2,450,362	1893	88,100	4,298,323	3,028,300
1870	64,660	3,180,223	2,263,021	1894	89,341	4,391,658	3,062,022
1871	65,540	3,344,000	2,507,000	1895	90,652	4,539,176	3,213,841
1872	66,310	3,312,993	2,731,429	1896	91,943	4,634,809	3,063,047
1873	66,860	3,484,862	2,441,220	1897	93,779	4,092,621	2,976,453
1874	67,860	3,487,863	2,386,749	1898	95,159	4,625,558	3,156,303
1875	68,960	3,548,157	2,384,494	1899	96,628	4,764,678	3,013,114
1876	70,100	3,549,515	2,443,153	1900	98,379	4,853,804	3,055,030
1877	71,200	3,531,214	2,451,275	1901	100,172	4,801,190	3,218,501
1878	72,270	3,418,325	2,759,950	1902	101,634	4,993,248	3,204,333
1879	72,820	3,661,534	2,540,824	1903	103,423	4,978,305	3,103,213
1880	74,020	3,684,329	2,671,299	1904	105,430	5,124,844	3,153,146
1881	75,010	3,679,694	2,560,483	1905	107,393	4,830,252	3,405,465
1882	75,000	3,930,621	3,078,831	1906	108,803	5,120,607	3,253,579
1883	76,852	3,884,964	2,881,430	1907	110,650	5,258,711	3,145,617
1884	77,812	4,007,858	2,674,065	1908	112,731	5,049,313	3,191,928
1885	79,112	3,957,328	2,833,108	1909	114,590	5,130,913	3,425,052
1886	80,212	3,972,797	2,661,898	1910	116,290	5,229,977	3,657,171
1887	81,472	4,062,606	2,757,722	1911	117,860	5,266,165	3,222,275
1888	82,722	4,268,601	2,760,971	1912	119,903	5,238,186	3,185,962
1889	84,182	4,232,577	2,991,608	1913	121,880	5,452,276	3,472,703
1890	85,282	4,227,915	3,130,996	1914	123,800	5,293,693	3,266,757

<sup>a</sup> 1867-1911, see Novosselsky, p. 25; 1912, see Roese, p. 276; 1913, computed from *Annuaire Statistique (de la Russie) 1922 et 1923*, Part. I, p. 350; 1914, estimated.

<sup>b</sup> See *Statistique de l'Ukraine* (Series I), No. 47, p. 9.

lished after the outbreak of the war in 1914. The latest final report ever issued by the tsarist government was that for 1910, preliminary figures only being published for 1911-1914.<sup>109</sup> The scanty data published for some sections of the country for 1915-1919 are more or less questionable. We shall reproduce on page 103 some of the pertinent birth figures as they may roughly indicate the general trend.

The separation of the church from the state in 1917 had brought the collection of vital statistics to a complete standstill. The Soviet Government, it is true, as early as December, 1917, decreed a civil registration law; yet for two years it remained practically a dead letter<sup>110</sup> and for three years more it was enforced in but a small section of the Empire. The re-establishment of vital

<sup>109</sup> See Kuvshinnikov, "The Natural Movement of the Population in the RSFSR in the Years 1920-1922" (Russian), *Vestnik Statistiki*, 1925, Nos. 4-6, p. 99.

<sup>110</sup> See Lubny-Gertsyuk, pp. 80-82; Kuvshinnikov, pp. 99-100.

## POPULATION, BIRTHS, AND BIRTH RATES IN RUSSIA, 1913-1919.\*

Territory	1913	1914	1915	1916	1917	1918	1919
<i>Provinces</i>							
Volhynia—Total	145,796	142,238					..
	90,655	90,301	61,720	72,902 <sup>b</sup>	76,154 <sup>b</sup>		....
Ekaterinoslav—Total	160,371	163,101	137,188	126,055 <sup>b</sup>			..
Kiev—Total	175,110	183,123	152,405	108,933 <sup>b</sup>			..
Podolia—Total	136,054	142,692					..
	10,801	11,116	9,202	7,000	5,973	10,582	9,367
Poltava—Total	131,769	135,872	110,912	89,673 <sup>b</sup>			..
Tauride—Total	87,591	88,544					..
	87,386	85,729	69,761				..
Kharkov—Total	152,067	151,605	128,854				..
	150,910	150,625	127,679	97,136	96,696		..
Kherson—Total	160,316	162,748					..
	126,623	128,170	106,517	82,004	43,690		..
Chernigov—Total	114,021	114,546	97,141				..
	108,599	108,535	91,556	109,130			..
<i>Cities</i>							
Petrograd	56,155	55,460	51,956	46,188	43,109	25,380	12,365
Moscow	54,649	54,373	49,738	44,402	36,308	24,900	24,564
Kiev	12,629	11,488	8,921	9,283	8,763	11,446	9,642
Odessa		13,567	11,589	10,829	9,643		
Nikolaiev <sup>b</sup>	3,861	4,902	3,128	4,239	3,936	3,961	2,989
Riga	11,233	11,431	6,842	2,667	2,230	1,090	2,212

\*Data for the Ukraine taken from *Statistique de l'Ukraine* (Series I), No 47, pp 1-7 93-95, for Petrograd from *Bulleten Leningradskogo Oblastnogo Otdela Statistiki* (Statistical Bulletin of the Leningrad District), No 23, 1929, p 14, for Moscow from *Annuaire Statistique de Moscou 1914-1925*, p 88, for Kiev from Kagan S., 'Die Bevölkerung der Stadt Kiev während der Jahre 1917-1920,' *Archiv für Soziale Hygiene und Demographie*, New Series, Vol IV, 1929, p 124, for Riga from *Statistisches Jahrbuch der Stadt Riga* (German), 1920-1922, p 30

<sup>a</sup> Excluding the five western districts

<sup>b</sup> Greek-Orthodox population only

<sup>c</sup> District of Gainsky only

<sup>d</sup> Excluding the district of Sevastopol

<sup>e</sup> Excluding the districts of Nikolaiev and Odessa

statistics was particularly slow in the Ukraine, which in recent years has taken the lead in this field.

The decree on the separation of the church from the state, published by the Government of the Soviets, furnished the means of withdrawing the parish registers from the hands of the church and of transferring them to the agencies of the state. The decree on the organization of the bureaus of civil status acts was published by the Government of the Soviets in the Ukraine on February 17, 1919. But much time was required for organizing the new elements in the registration of the civil status acts. The new system was established first in the cities, much later in the rural localities.

The attempts made to organize regular observations of the movement of the population in 1919-1922 furnished only incomplete and detached statistical materials.

During the first years of the existence of the power of the Soviets in the Ukraine, the work of organizing the population

statistics was hampered not only by the circumstances unfavorable to all statistical work (civil war; banditism; later, famine, etc.) but also by quite special obstacles due to religious prejudices of one part of the population which refused to acknowledge the civil registration system. But as the political consciousness of the masses and the strength of the Soviet apparatus increased, the cases of abstention from registering the civil status acts with the Republican agencies established for this purpose became rarer and rarer. When conditions had become sufficiently favorable, energetic measures had to be taken in order to avoid the deficiencies existing in the former work. These measures were taken upon a revision of the agencies in charge of the registration of the civil status acts, effected by the Central Statistical Administration of the Ukraine at the end of 1923 which had disclosed the greatest deficiencies of their work.<sup>121</sup>

For 1920-1922, the compilation of vital statistics was indeed confined to 28 million people, all living in the European part of the RSFSR. This registration area, which included those territories in which at least 90 per cent of the births and deaths were supposed to be reported,<sup>122</sup> comprised 16 European provinces, the Tartar ASSR, the Chuvash Autonomous Area, and the cities of Moscow and Petrograd. Although this area comprised about two-fifths of the total population of the European part of the RSFSR, it cannot be considered as typical since it included about two-thirds of the "consuming region" and only one-third of the "producing region" of that country.

From 1923 on, the compilation of vital statistics was also extended to an ever-increasing part of Asiatic Russia;<sup>123</sup> but there remained all the time even for European Russia territorial gaps. No birth data seem thus to be available for the Daghestan ASSR (with the exception of the urban districts in 1926). The statistics for 1923 do not comprise the Ural Area and only three districts

<sup>121</sup> *Statistique de la population de l'Ukraine contemporaine*, Report submitted by the Central Statistical Administration of the Ukraine SSR to the 1929 session of the International Statistical Institute, pp. XI-XII. See also *Statistique de l'Ukraine* (Series I), No. 70, pp. VIII-IX.

<sup>122</sup> See Kuvshinnikov, pp. 99-100.

<sup>123</sup> For 1926, birth data have thus been published for Siberia (Dec. 17, 1926: 8,690,990 inhabitants), the Buriat-Mongolian ASSR (491,266), the major part of the Far East (Trans-Baikal, Amur Sub-Area, and the districts of Vladivostok and Khabarovsk: 1,796,286), and the Armenian SSR (879,872), covering 38 per cent of the population of Asiatic Russia (30,948,453).

of the North Caucasus, while those for 1924 completely exclude the North Caucasus. As late as 1926, the birth statistics excluded, apart from the rural districts of Daghestan, some important sections of the North Caucasus and a number of districts in the Bashkir ASSR and the Central Volga Area.<sup>114</sup> But the population of European Russia not covered by birth statistics in 1926 was only about 1,800,000 or 1.6 per cent of the total population of European Russia. And so far as birth statistics have been compiled, they probably are more accurate than in pre-war times, although in some districts, at least prior to 1926, the still-born were included in the births.<sup>115</sup>

A comparison of the post-war Russian birth statistics with pre-war statistics is greatly hampered by the changes in territory that occurred from 1917 on. Vast areas were ceded to Finland, Estonia, Latvia, Lithuania, Poland, Rumania, and Turkey. Moreover, the provinces appearing in the post-war statistics do not all correspond to the former provinces. But even a comparison among post-war years is well-nigh impossible, not only because the area covered by the birth statistics varied, but still more so because the administrative division of the country was reorganized again and again<sup>116</sup> and because the birth statistics for recent years were no longer published by minor subdivisions. Other difficulties arose from the fact that for some years the official population estimates, birth figures, and birth rates were frequently revised, the revised data appearing in different documents or in the case of some population estimates not being published at all. Making use of those data at our disposition which seem to approach the nearest the truth, we shall present here the following series of tables for European Russia:

#### I. Statistics by provinces

- a. Population: mean 1911-1913, mean 1920-1922, March 15, 1923, Dec. 17, 1926
- b. Births: mean 1911-1913, annually 1920-1925
- c. Birth rates: mean 1911-1913, annually 1920-1926

<sup>114</sup> See *Mouvement de la population de l'URSS en 1926*, p. 177.

<sup>115</sup> See *ibid.*, 1923-1925, p. 17.

<sup>116</sup> See, for instance, *Administrativno Territorialnoye deleniye Soinuzu SSR* (Administrative Division of the USSR), Moscow, 1929, and *Supplement thereto*, Moscow, 1929.

- II. Statistics by areas according to the subdivision of 1923  
 a. Population: March 15, 1923, mean 1924, mean 1925  
 b. Births: 1923, 1924, 1925  
 c. Birth rates: mean 1911-1913, annually 1923-1925
- III. Statistics by areas according to the subdivision of 1926  
 a. Population: March 15, 1923, mean 1926, Jan. 1, 1928  
 b. Births: annually 1923-1927  
 c. Birth rates: 1923, 1925, 1926, 1927
- IV. Statistics by areas according to the subdivision of 1929  
 a. Population: mean 1926, 1927, 1928  
 b. Births: 1926, 1927, 1928  
 c. Birth rates: 1926, 1927, 1928

The differences between the administrative subdivisions of 1923 (Table II) and of 1926 (Tables I, III) are about as follows:

1923	1926
I =	I 1, 4; II 1, 3
II =	I 2, 3
III =	II 2, 4, 5, 6
IV =	III; Gomel (White Russia)
V =	IV <sup>a</sup>
VI =	IV <sup>b</sup>
VII =	V; IX 2
VIII =	VI; IX 4, 6
IX =	VII
X =	VIII; IX 1
XI =	IX 3, 5; X 3, 4, 5
XII =	X 1, 2
XIII =	XI
XIV =	XII; XIII

The differences between the administrative subdivisions of 1929 (Table IV) and of 1926 (Tables I, III) are such that a comparison like the one above is impossible. It can merely be said that the following subdivisions coincide:

1929	1926
IX =	VII
X =	VIII
XIV =	XI
XV =	XII
XVI =	XIII

The documents on which the data are based are the following:

- I. 1911-1913. For population and births see *Annuaire Statistique (de la Russie) 1922 et 1923*, Part I, p. 350. Birth rates computed by relating births to population.
- 1920-1922. See *Sbornik Statisticheskikh Svedenii po Soiuзу SSSR* (Statistical Handbook of the USSR) 1918-1923, pp. 40-42; Kuvshinnikov, p. 108.

# I. POPULATION, BIRTHS, AND BIRTH RATES BY PROVINCES IN EUROPEAN RUSSIA, 1911-1926

Provinces	Population			Births					Birth Dates											
	1911-1913	1920-1922	March 15, 1923	Dec 17, 1925	1911-1913	1920	1921	1922	1923	1924	1925	1911-1913	1920	1921	1922	1923	1924	1925	1926	1928
European RSFSR																				
I. Northeastern Area.	443,413	380,933	402,699	426,184	19,010	12,365	14,181	15,930	16,980	16,172	19,306	44	26	39	3	39	738	445	642	9
1. Arkhangel'sk prov.			981,077	1,053,832	75,565	27,944	26,982	29,385	42,629	43,152	48,163	45	35	42	7	44	43	548	448	9
2. Vologda prov.	1,668,079	711,922	657,768	676,107					28,626	31,758	32,312						43	548	448	9
3. North Dvina prov.																				
4. Komi (Zyran) Aut Area			211,008	207,208					9,230	9,990	9,917						43	749	248	51
II Leningrad Area and Karelian ASSR			213,008	266,731	20,542 <sup>a</sup>			26,320	9,162	9,707	12,224	47	8 <sup>a</sup>				43	040	747	146
1. Karelian ASSR	450,338 <sup>a</sup>		1,071,103	1,614,008	98,087				31,906	31,901	38,402	37	8				42	825	937	97
2a Leningrad city	3,348,141																			
2b Leningrad prov.			1,078,148	1,178,077					37,669	41,402	43,208									
3 Murmansk prov.			17,385	23,006																
4 Novgorod prov.	1,610,837	908,003	944,924	1,020,040	58,594	28,455	33,505	36,228	37,721	39,491	43	49	6				35	135	937	430
5 Pskov prov.	1,266,412	1,296,886	1,332,651	1,728,413	56,554	34,909	47,568	56,006	44,772	46,189	70,916						30	230	431	140
6 Tulov prov.			602,852	730,954					28,705	28,792	32,746						40	340	432	41
III Chernyavets prov																				
1 Riazan Area			1,157,939	2,005,311	20,253	39,419	44,247	56,241	59,860	67,924	59	30	2	37	3	38	45	240	647	43
2 Smolensk prov.	1,852,011	2,067,742	2,276,256	2,939,712	98,155	64,365	76,708	80,968	102,860	91,017	105,764	50	3	3	3	3	45	240	647	43
IV Central Industrial Area																				
a) Moscow Industrial Sub-Area	1,913,630	1,206,363	1,836,104	1,821,099	87,531	45,510	48,024	56,253	60,429	62,181	60,394	45	7	32	0	37	45	244	148	143
1 Vladimir prov.			888,918	1,195,906																
2 Yaroslavl prov.			1,076,054	1,151,704	68,938	27,353	29,574	40,861	53,174	55,083	68,965	50	4	28	1	26	49	445	151	146
3 Kaluga prov.	1,364,705	992,039	1,174,925	81,615	79,575	33,027	34,880	37,614	27,614	24,664	30,271	46	6	32	2	27	32	350	731	620
4 Kostroma prov	1,745,616		1,511,023	2,026,947	135,110	74,981	33,555	35,236	48,832	51,960	57,575	36	7							
5a Moscow city																				
5b Moscow prov.	3,678,510	1,740,588	2,287,963	2,539,002		48,321	54,645	64,234	91,313	104,409	112,057	36	7	28	9	32	40	442	946	81
6 (incl city)																				
6 Nizhni Novgorod prov	2,040,051	2,058,438	2,535,586	2,748,460	95,732	48,433	48,486	92,408	112,793	123,922	127,037	46	9	23	5	26	5	48	44	57
7 Tver prov	2,058,759	2,027,018	2,113,006	2,238,890	90,123	61,407	60,644	81,247	83,723	90,924	93,789	43	8	29	4	27	9	32	38	61
8. Yuzhno-Tula b) Ruzan-Tula	1,179,383	650,981	1,309,707	1,946,166	51,270	28,635	20,287	20,208	53,789	53,964	57,362	43	6	20	6	31	2	43	41	141
Sub-Area																				
1 Ruzan prov.	2,239,024		2,518,423	2,428,914	105,226	66,803	59,326	60,941	100,554	107,269	111,006	47	3							
2. Tula prov.	1,690,372		1,678,154	1,505,263	83,202				64,200	74,708	78,087	49	2	39	9	34	4	37	745	049

# I. POPULATION, BIRTHS, AND BIRTH RATES BY PROVINCES IN EUROPEAN RUSSIA, 1911-1926--Continued

Provinces	Population				Births				Birth Rates												
	1911-1913	1920-1922	March 15, 1923	Dec 17, 1926	1911-1913	1920	1921	1922	1923	1924	1925	1911-1913	1920	1921	1922	1923	1924	1925	1926		
V. Central Black Soil Area																					
1 Voronezh prov.	3,376,211		3,261,120	3,308,439	174,670				124,227	151,908	146,924	51.7					38.1	48.0	45.2	47.4	
2 Kursk prov.	2,974,000		2,821,878	2,906,560	141,616				123,156	121,068	138,535	47.6					43.7	43.7	45.0	43.2	
3 Orlov prov.	2,542,800		1,906,462	1,884,533	120,919				72,217	74,230	88,538	41.6					45.0	44.7	47.1	43.6	
4 Tambov prov.	3,663,523		2,766,418	2,727,234	170,500				106,566	118,437	116,869	47.8					38.6	44.3	43.6	41.3	
VI Viatka Area.																					
1 Votyak Aut. Area	710,226		750,204						27,631	32,059	40,858						38.9	44.1	154.7	75.1	
2 Viatka prov.	3,842,793		2,209,508	2,224,053	102,437				92,426	106,762	110,137	50.1					41.8	51.3	36.0	75.1	
3 Maryskaya Aut. Area			398,250	432,101					18,471	26,190	25,531						41.8	51.3	36.0	75.1	
VII Ural Area	3,809,720 <sup>3</sup>	1,949,081 <sup>6</sup>	2,842,978	2,691,024	209,250 <sup>1</sup>	72,135 <sup>6</sup>	84,847 <sup>6</sup>	63,516 <sup>6</sup>	85,467	121,901	120,271	48.7 <sup>d</sup>					46.4	51.5	55.5	35.5	
VIII Bashkir ASSR	3,027,712 <sup>4</sup>				147,495 <sup>2</sup>												30.1	40.4	40.4		
IX. Central Volga Area:																					
1 Orenburg prov	2,218,285		644,486	744,151	119,243				27,240	22,941	32,050	53.8					42.3	43.8	0.52	35.1	
2 Penza prov	1,931,507		2,102,646	2,058,765	88,024				106,659	108,068	101,183	50.7					50.7	51.3	34.7	145.4	
3 Samara prov	3,635,459		2,342,241	2,413,107	202,702				83,195	96,423	114,920	55.8					32.7	42.9	49.7	74.8	
4 Tatar ASSR	2,720,091		2,318,039	2,284,093	124,665	84,906	88,185	49,830	103,009	107,642	114,986	45.7	39.1	30.9	17.8		50.0	43.4	44.1	93.8	
5 Ufa prov.	1,400,580		1,400,580	1,384,093	90,018				66,379	66,417	69,071	40.3					47.4	44.5	14.7	144.1	
6 Chuvash ASSR	2,006,930		748,704	864,475	90,018	28,871	30,783	22,889	35,011	31,254	35,027		53.0	40.6	32.8		46.8	40.0	0.45	64.5	
X. Lower Volga Area:																					
1 Astrakhan prov.	1,242,193		399,142	510,386	49,348				19,169	19,008	21,983	39.7					48.0	41.1	34.5	144.3	
2 Kalmyk Aut. Area			137,000	141,004					1,863	3,264	4,080						13.6	10.0	8.28	83.3	
3 Nizhny Novgorod ASSR																					
4 Povolzhia ASSR	3,160,471	2,045,150	509,483	571,922		83,418	64,376	75,975	27,034	24,339	21,557	49.0	26.7	21.0	25.4		47.1	44.5	144.4	64.7	
5 Saratov prov			2,754,129	2,807,475	154,925				124,804	126,431	121,711						45.9	46.0	43.4	44.4	
6 Simbirsk prov			1,246,477	1,408,449					37,437	42,373	44,732						30.3	31.1	63.2	83.4	
XI Crimean ASSR	1,906,960 <sup>6</sup>		607,777	714,081	85,827 <sup>6</sup>				13,732	20,013	22,876	45.0 <sup>6</sup>					22.6	31.1	41.4	436.0	
XII Northern Caucasus Area																					
XIII Daghestan ASSR			4,071,955	6,363,085					161,501		269,165						39.7				
European RSFSR, Total	70,427,760	28,024,870	65,671,163	82,036,319	3,315,105	981,266	913,006	979,451	2,546,171	3,003,475	3,508,020	47.0	30.9	32.6	33.4		40.3	43.3	44.5	544.1	

\* Olonets    \* Perm    \* Ekaterinburg    \* Ufa.    \* Tauride





## II POPULATION, BIRTHS, AND BIRTH RATES BY ADMINISTRATIVE DIVISIONS (OF 1923) IN EUROPEAN RUSSIA, 1911-1925

Administrative Divisions	Population			Births			Birth Rates			
	March 15 1923	Mean 1924	Mean 1925	1923	1924	1925	1911-1913	1923	1924	1925
<b>A European Part of RSFSR</b>	844 100	911 900	923 900	30 098	36 725	42 946	45 7	41 6	40 3	15 8
I Extreme North	1 638 845	1 692 900	1 707 600	71 255	74 910	80 475	45 9	43 5	41 2	47 1
II North	5 089 877	5 808 500	6 074 700	189 321	210 798	232 115	38 2	37 2	36 3	38 2
III North-West	5 675 469	4 753 900	4 819 500	240 626	202 929	230 284	48 9	43 1	42 7	17 8
IV West	13 786 276	14 792 000	14 979 400	567 231	600 116	644 574	44 6	41 1	40 6	13 0
V Industrial Area of Moscow	4 196 577	4 025 200	4 001 400	163 754	181 977	189 683	48 2	39 0	45 2	47 4
VI Razan Tula Area	12 560 325	12 510 700	12 764 600	535 904	584 594	591 519	19 3	42 7	46 7	46 3
VII Central Agricultural Area	6 884 727	6 532 700	6 733 300	276 629	302 837	325 939	48 2	40 2	46 4	15 4
VIII Volga Kama Area	3 487 464	3 264 800	3 463 300	113 707	117 454	121 321	54 0	50 0	53 0	53 0
IX Ural Area	8 532 903	8 237 500	8 321 900	338 821	344 924	361 351	50 9	39 7	48 6	15 5
X Bashkir ASSR	536 142	8 347 000	8 437 800	31 029	22 360	26 663	30 7	39 2	34 7	41 7
XI Volga Area	607 777	645 200	638 700	13 732	20 013	22 876	45 0	22 6	30 7	33 9
XII Lower Volga Area	4 071 955	650 900	7 900 000	161 591		299 195	47 1	39 7		37 3
XIII Crimean ASSR										
XIV North Caucasus										
Total	67 912 437	70 174 100	79 440 600	2 733 596	3 055 527	3 365 316	46 8	40 3	43 5	41 9
<b>B Ukrainian SSR</b>	36 279 061	27 516 800	27 754 700	931 415	1 150 577	1 185 028	12 2	35 4	41 8	42 7
<b>C White Russian SSR</b>	3 024 870	4 030 100	4 125 800	111 810	159 010	172 331	38 9	37 0	39 5	41 8
European Part of USSR	97 216 368	101 721 000	111 330 100	3 776 851	4 365 114	4 922 879	45 5	38 8	42 9	44 2



## IV POPULATION, BIRTHS, AND BIRTH RATES BY ADMINISTRATIVE DIVISIONS (OF 1929) IN EUROPEAN RUSSIA, 1926-1928

Administrative Divisions	Mean Population (In thousands)			Births		Birth Rates		
	1926	1927	1928	1926	1927	1928	Birth Rates	
							1926	1927
A European Part of RSFSR								
I Northern Area	2,344 7	2,391 4	2,433 7	112,628	106,690	112,058	48 0	44 6
II Leningrad Area	5,428 8	5,550 9	5,674 2	198,304	190,266	189,289	36 5	34 3
III Karelian ASSR	266 2	271 4	275 9	12,331	12,024	13,407	46 3	44 3
IV Western Area	6,457 8	6,597 5	6,688 5	296,502	291,364	265,819	45 9	44 2
V Moscow Area	10,113 8	10,382 1	10,648 0	399,983	399,789	387,110	39 5	38 5
VI Ivanov Industrial Area	4,297 0	4,377 3	4,428 0	181,651	188,618	189,219	42 3	43 1
VII Central Black Soil Area	10,980 6	11,254 0	11,495 3	487,988	514,012	511,304	41 4	45 7
VIII Nizhni-Novgorod Area	7,316 4	7,452 1	7,552 6	362,570	356,915	373,641	49 6	47 9
IX Ural Area	6,677 7	6,859 3	7,114 3	371,516	369,015	392,876	55 6	53 6
X Bashkir ASSR	2,659 6	2,699 7	2,781 6	118,505	132,191	151,548	41 6	49 1
XI Central Volga Area	6,836 3	7,011 2	7,201 9	326,569	338,015	361,029	47 8	48 2
XII Tartar ASSR	2,559 3	2,611 7	2,655 6	99,810	129,282	126,519	39 0	49 5
XIII Lower Volga Area	5,285 6	5,421 9	5,551 8	219,680	236,338	234,930	41 6	43 6
XIV Crimean ASSR	696 6	721 5	740 1	25,399	26,399	25,315	36 6	34 2
XV Northern Caucasian Area	7,753 9	8,469 8	8,707 7	332,641	362,702	339,521	42 9	42 8
Total	79,674 3	82,102 1	83,919 2	3,546,189	3,653,955	3,673,585	44 5	44 8
B Ukrainian SSR	28,692 6	29,369 2	30,005 5	1,207,907	1,184,366	1,139,268	42 1	40 3
C White Russian SSR	4,917 1	5,037 8	5,120 2	200,344	194,633	186,524	40 7	38 6
European Part of USSR	113,284 0	116,509 1	119,074 9	4,954,440	5,032,954	4,999,377	43 7	42 0

1923. For population see *Annuaire Statistique 1922 et 1923*, pp. 2-7. For births see *Mouvement de la population de l'URSS en 1923-1925*, pp. 2-17; *Abrégé des données statistiques de l'Union des Républiques Socialistes Soviétiques* (French), 1925, pp. 20-21.  
Birth rates computed by relating births to population.
- 1924-1926. For births (1924-1925) see *Mouvement de la population de l'URSS en 1923-1925*, pp. 2-17. For birth rates see Bekunova, S., "Vital Statistics in the European part of the RSFSR for 1925 (Russian), *Statistical Review*, January, 1928, pp. 100-101; *Données statistiques de la santé publique et de l'organisation du secours médical dans l'URSS durant 1924-1925*, p. 10; *Statistika Ukraini* (Series I), No. 106, pp. 2-3.  
For population (Dec. 17, 1926) see *Recensement de la population du 17 décembre 1926, Résumés abrégés, Population de l'URSS* (French), pp. 6-27.
- II. 1911-1913. See *Mouvement de la population de l'URSS en 1923-1925*, pp. XXI, XXIII.
1923. Population and births computed from Table I. Birth rates computed by relating births to population.
- 1924-1925. For population see *Mouvement de la population de l'URSS en 1925*, p. XVIII.  
Births computed from Table I.  
Birth rates computed by relating births to population.
- III. 1923-1925. Births computed from Table I. For birth rates, 1925, see *Mouvement de la population de l'URSS en 1926*, p. 9; *Statisticheskii Spravochnik SSSR* 1928, p. 74.
1926. See *Mouvement de la population de l'URSS en 1926*, pp. 36-47.
1927. For population (Jan. 1, 1928) see *Statisticheskii Spravochnik SSSR* 1928, pp. 20-25; the data refer to the limits as of January 1, 1928.  
For births and birth rates see *ibid.*, pp. 76-79.
- IV. The population of January 1, 1927, 1928, and 1929, as well as the births for 1926, 1927, and 1928 have been kindly furnished by the Central Statistical Administration. The mean population of 1926 for the Ural Area, the Bashkir ASSR, the Northern Caucasus Area, the

Crimean ASSR, the Ukraine, and White Russia have been taken from *Mouvement de la population de l'URSS en 1926*, pp. 36-47. As to the other districts the boundaries of which have been considerably changed through the reorganization of the administrative division of 1929, a new estimate was necessary. Since their total population in the mean of 1926 was 61,886,560, and on January 1, 1927, 62,701,009, we have assumed that in each case the mean population was by 1.3 per cent lower than on January 1, 1927. The mean population of 1927 and 1928 has been computed on the basis of the official population estimates for Jan. 1, 1927-1929.

The birth rates have been computed by relating the births to the mean population.

A few comments may be appended to those tables:

- I. 1911-1913. The birth figures may be in part too low. According to the revised figures published in *Statistique de l'Ukraine* (Series I), No. 47, p. 9, the average number of births in 1911-1913 would have been 5,318,876 instead of 5,249,653, and the birth rate 44.4 instead of 43.8.

- 1920-1922. The birth figures are to be considered with due reserve. We show in the following table for the cities of Moscow and Leningrad the birth figures as they appear (1) in *Handbook* 1918-1923, pp. 40-41, and (2) in *Annuaire Statistique de Moscou* 1914-1925, p. 88, and in *Bulleten Leningradskogo Oblastnogo Otdela Statistiki* 1929, No. 23, p. 1:

	1920	1921	1922
Moscow ..... (1)	24,981	33,555	35,236
	(2) 23,929	36,111	35,320
Leningrad ..... (1)	28,670	33,666	26,320
	(2) 16,119	28,517	24,252

The birth rates for the total area are taken from Kuvshinnikov, p. 108. They do not include the cities of Moscow and Leningrad. It is, however, possible to derive from *Handbook* 1918-1923, pp. 41-42, the following table for 1920-1922, showing the totals, (a) excluding

Moscow and Leningrad, (b) including Moscow and Leningrad:

	Mean Population	Yearly Births	Birth Rate
(a) ... ..	26,291,744	863,810	32.9
(b) ... ..	28,025,870	924,619	33.0

1923-1925. The birth data are incomplete for some areas, as may be seen from the following, certainly defective, list:

Murmansk province, 1923, no data for the Kuzimenskoi sub-district.

Viatka area, 1923-1925, no data for the city of Cheboksaram; 1924 no data for the city of Krasnokokshaik.

Kalmyk ASSR, 1924, no data for January to August for the Remontinskogo sub-district.

North Caucasus, 1923, no data except for the districts of Stavropol and Tersk and the Kuban Sub-Area.

The population as of March 15, 1923, has been officially calculated. With the exception of the North Caucasus where we have only included the three territories covered by birth statistics, we have inserted the populations of the entire respective provinces without regard to incompleteness of birth records. Our birth rates for 1923 are therefore in part too low. The birth rates for the total of Russia proper in 1924-1925 exclude the province of Ivanovo-Voznesensk as well as the Bashkir ASSR, the North Caucasus, and the Daghestan ASSR.

1926. The birth rates for the total of Russia proper exclude the same territories as for 1924-25.

III. 1926. The birth data are incomplete for the following areas:<sup>117</sup>

Orenburg province. The data "are missing up to 28 per cent of the total number of registered acts in the district of Orsk and 41 per cent in the district of Orenburg." (Total population of those two districts Dec. 17, 1926: 99,334 and 425,192.)

Tartar ASSR. The data "are lacking only for an insignificant number of the population."

Bashkir ASSR. "There are missing 15 per cent of the total number of births." (Total population 2,694,924.)

<sup>117</sup> See *Mouvement* 1926, p. 177.

North Caucasus. No data for the Ingush Autonomous Region (75,141), the Chechen Autonomous Region (309,886), the Bataisk sub-district (108,052), and the Armiansk sub-district (8,184).

Daghestan ASSR. No data for the rural districts (703,044).

The mean population in each case refers only to the territory for which birth data are available.

1927. The birth figures are in part preliminary figures.

### San Marino

No birth statistics seem so far to have been compiled for the Republic of San Marino which, according to the last census of December 31, 1906, had 9,796 inhabitants,<sup>118</sup> and according to an estimate for August, 1927, 13,013.<sup>119</sup>

### Spain

The General Council of Statistics in its first report on vital statistics covering the years 1858-1861 stated:

Since the instruction for the economico-political government of the provinces of June 23, 1813, down to today, various decrees have been issued in Spain in order to obtain civil registration, both with the original data of the church and by asking the latter to communicate to the municipal authorities of the administration the sacramental acts entered in the register, referring to the births and the marriages as well as to the act of ecclesiastical burial for the dead.<sup>120</sup>

The instruction of 1813 provided indeed that "the municipal councils send to the chief political officer of the province every three months a record of the born, married and dead in the locality, furnished by the parish priest or priests with specification of the sexes and ages, of which record the council shall keep a register."<sup>121</sup> A royal order of December 10, 1836, apparently even meant to introduce compulsory civil registration since it provided that "every individual . . . shall be obliged . . . to inform the

<sup>118</sup> See *Annuaire International de Statistique*, Vol. I, 1916, p. 15.

<sup>119</sup> See *Aperçu de la démographie des divers pays du monde*, 1929, p. 19.

<sup>120</sup> *Memoria sobre el Movimiento de la Población de España en los Años 1858, 1859, 1860 y 1861*, p. VIII.

<sup>121</sup> *Ibid.*, p. XV; see also *ibid.*, the law of February 3, 1823.



municipal council of all the births, marriages, and burials occurring in his respective family with a statement of the same facts as are requested for the parish records."<sup>122</sup>

But no comprehensive vital statistics were compiled for any year prior to 1858, and the data used for the birth statistics of 1858-1860 were merely the reports of baptisms furnished by the Catholic clergy. In 1861, registration was extended to the still-born and the children dying unbaptized, but it was incomplete from the beginning<sup>123</sup> and became more and more deficient in the course of time. The only basic data of any value for 1858-1870 were then the numbers of Catholic baptisms and the accuracy of even those has been questioned.<sup>124</sup> For this earlier period we shall, therefore, confine ourselves to giving the following table:

LIVE-BORN IN SPAIN, 1858-1870

Period	Mean Population <sup>a</sup> (In thousands)	Yearly Live-born <sup>b</sup>	Birth Rate
1858-1860 .....	15,583	559,529	35.9
1861-1865 .....	15,809	610,635	38.6
1866-1870 .....	16,088	598,749	37.2

<sup>a</sup> Computed from *Movimiento de la Población de España*, 1921-1923, p. IX. The figures include the (very small) non-Catholic population.

<sup>b</sup> Taken from *Memoria* 1858-1861, p. 69; *Movimiento*, 1861-1870, p. 4.

Compulsory civil registration, which so far had never worked satisfactorily, was reorganized through a law of June 17, 1870.<sup>125</sup> But no birth statistics were published for 1871-1877, since a large part of the records were destroyed during the civil war.<sup>126</sup> From 1878 on, the birth statistics are all-inclusive and fairly complete.

<sup>122</sup> *Ibid.*, p. XVII.

<sup>123</sup> See *ibid.*, p. 60.

<sup>124</sup> See *Movimiento de la Población de España en el Decenio de 1861 á 1870*, p. IX; *Statistik des Deutschen Reichs*, New Series, Vol. 44, pp. 68-69.

<sup>125</sup> See Pascual, Agustín, *Rapport sur l'état, l'organisation et le progrès de la statistique en Espagne, présenté à la huitième session du Congrès International de Statistique*, Madrid, 1872, p. 20; *Reseña Geográfica y Estadística de España*, 1888, II, p. 10; League of Nations, Health Organisation, Statistical Handbooks Series: No. 4, *Official Vital Statistics of the Kingdom of Spain*, p. 24.

<sup>126</sup> See *Movimiento*, 1861-1870, p. V; *Reseña*, 1888, II, p. 11; *Confronti Internazionali 1865-1883*, p. XCVIII. A volume, *Estadística del Registro Civil Relativa al Año de 1873*, published in 1876, contains the vital statistics of Madrid only. According to a statement on page 10, it was to be the first section of *Estadística del Registro civil de España, durante el año de 1873*; but apparently no further sections have been published.

### Turkey

According to the census of October 28, 1927, 1,040,669 of the 13,648,270 inhabitants of Turkey lived in Europe.<sup>127</sup> The Ministry of Health and Social Welfare of the Turkish Republic, in 1928, described the status of registration as follows:

The registration of births and deaths is governed by the law of August 14th, 1913. In spite of this law, however, registration is not yet sufficiently organised to give strictly accurate statistics. A certain number of births still escape registration.

In order to arrive at more accurate results, the Ministry of Health decided to have the movement of births and deaths recorded by its own agents; the figures obtained by this means are higher than those furnished by the Civil Registration Department.<sup>128</sup>

The numbers of births registered by the Health Ministry in 1924-1926 were 135,657, 140,436, and 158,027. This would correspond to a birth rate of 10 or 12 and shows that only a minority of the births is registered even by the Health Ministry.

The Health Ministry recently advised the author that no further birth statistics are available for publication. The Central Statistical Office of the Turkish Republic informed him that the collection of birth statistics is still unsatisfactory.

### Yugoslavia

The Kingdom of Yugoslavia, before the administrative reorganization of the country in 1929,<sup>129</sup> was composed of the following seven provinces:<sup>130</sup>

1. North and South Serbia, North Serbia corresponding practically to the state as constituted at the Berlin Congress of 1878, South Serbia to the territory acquired by the Treaty of Bucharest of 1913; but the province includes in addition 40 com-

<sup>127</sup> See *Recensement général de la population au 28 octobre 1927* (French), Vol. III, p. 8.

<sup>128</sup> *International Health Year-Book 1928*, p. 820.

<sup>129</sup> See *Statistički Pregled Kraljevine Jugoslavije po Banovinama*, Belgrade, 1930, and Kovács, Aloys, "La nouvelle division administrative de la Yougoslavie," *Journal de la Société Hongroise de Statistique*, Vol. VIII, 1930, pp. 59-68.

<sup>130</sup> See *Résultats préliminaires du recensement de la population dans le Royaume des Serbes, Croates et Slovènes du 31 janvier 1921*, pp. VIII-IX.

munes ceded by Bulgaria through the Treaty of Neuilly of 1919, and the territories acquired by Montenegro from Turkey in the war of 1912-1913.

2. Montenegro, within limits as of 1912.

3. Bosnia and Hercegovina, within the limits of their annexation by the Austro-Hungarian monarchy.

4. Dalmatia, corresponding to the former Austrian province of Dalmatia, but excluding Zara and surroundings and the island of Lagosta.

5. Croatia and Slavonia, corresponding practically to those Hungarian provinces, but including in addition the island of Krk and the commune of Kastav ceded by Austria and the district of Medjumurje ceded by Hungary.

6. Slovenia, corresponding to the annexed parts of the former Austrian provinces of Carniola, Carinthia, and Styria, but including also the Hungarian Prekomurje and part of the Hungarian county of Zala.

7. Vojvodina, practically corresponding to the territories ceded by Hungary proper through the Treaty of Trianon.

Before the Balkan wars birth statistics were collected in the entire area of the present Kingdom of Yugoslavia with the exception of the territories then belonging to Montenegro and Turkey. Separate pre-war statistics are available for North Serbia (the Kingdom of Serbia as constituted in 1878), Bosnia and Hercegovina (3), and Croatia-Slavonia (5). We shall discuss those statistics as well as their fragmentary continuation from 1913 to 1919 on the following pages.

Since the formation of the present kingdom no comprehensive birth statistics have been published, but the Statistical Office of Yugoslavia hopes to publish them in the near future. Some birth and death rates (but no absolute figures) have recently been reported by the Central Health Institute at Belgrade.<sup>121</sup> We reproduce them on the next page for what they are worth.

*Serbia.* Birth statistics have been published for each year from 1862 to 1912, but they probably never were complete because heretofore no civil registration has existed in Serbia. So far as the Christian population is concerned, the birth statistics all the time

<sup>121</sup> See *Le Service d'hygiène dans le Royaume de Yougoslavie*, Belgrade, 1930, p. 9.

## BIRTH AND DEATH RATES IN YUGOSLAVIA, 1921-1927

Provinces	1921	1922	1923	1924	1925	1926	1927
Birth Rates							
North Serbia		36 13	37 57	39 10	39 28	40 85	
South Serbia		23 07	25 81	28 38	28 07	34 34	
Montenegro		27 52	24 01	23 98	27 34	29 84	
Bosnia and Hercegovina	36 66	38 78	37 82	39 19	38 62	38 80	
Croatia and Slavonia	34 18	31 83					
Slovenia	30 87	29 63	30 34	30 02	29 16	31 55	29 00
Vojvodina		28 83	29 52	25 01	29 98	30 76	
Dalmatia				33 54	37 44	38 30	34 05
Death Rates							
North Serbia		18 62	19 85	20 58	17 23	17 87	
South Serbia		12 84	13 74	15 14	16 16	15 10	
Montenegro		11 06	10 97	10 95	11 79	10 94	
Bosnia and Hercegovina	20 70	23 55	23 34	22 36	20 81	20 94	
Croatia and Slavonia	23 76	23 94					
Slovenia	23 11	19 14	19 01	17 56	16 98	19 02	18 24
Vojvodina		23 23	22 18	20 26	20 23	21 45	
Dalmatia				21 47	21 43	19 30	20 87

were actually statistics of baptisms and thus excluded the live-born who died too young to be baptized. Prior to 1880, the various consistories merely informed the Statistical Office of the total yearly number of baptisms. Towards the end of 1879, special schedules were introduced in which the ecclesiastical authorities were to enter separately the total number of baptisms of legitimate children, of illegitimate children, and of twins.

The examination of the data which those schedules contained has permitted us to ascertain quite a few defects and a large number of mistakes, those schedules, therefore, could not be used, especially not those which came from the annexed provinces and which contained a large number of omissions. For the year 1880, the statistical documents have been furnished in a more exact manner and from this period on an appreciable progress has been noticed in the manner of handling and filling out the documents which constitute the basis of our vital statistics.<sup>1-3</sup>

<sup>1-3</sup> "Mouvement de la population en Serbie de 1874-1879," *Statistique de la Serbie*, Vol. XV, p. 4

But we rather suspect that even in the following years the reports of baptisms included the baptisms of older children and of adult persons. In any case, an elimination of such baptisms through the Statistical Office became possible only from 1891 on when an individual schedule giving also the date of birth was to be filled out for each baptism.

While baptisms among the Greek-Orthodox population were reported after a fashion from 1862 on and fairly well since 1879, the information which the Statistical Office received as to Catholic and Protestant baptisms was quite deficient. We are not even sure whether such baptisms were reported to any extent before 1880. For 1881-1893 and 1896-1905 the numbers of Catholic and Protestant "births" have been published, but they are so low—192 on an average for Catholics and 30 for Protestants<sup>133</sup> with an average population of 10,131 Catholics and 1,070 Protestants at the censuses of 1884, 1890, 1895, and 1900<sup>134</sup>—that we cannot possibly accept them as trustworthy, at least not for the Catholics.

As to the Jewish births we are likewise doubtful whether they were regularly reported to the Statistical Office prior to 1880. For 1880 the published number (79) was exceedingly low, but for 1881-1893 and 1896-1905 it averaged 175 with an average population of 4,911 at the censuses of 1884-1900, so that the reports for those years were possibly complete.

As to the Mahometan births we feel sure that they were not reported at all prior to 1891. For 1891 only twelve such births were reported; for 1892, 87; for 1893, 173; and for 1896-1905 an average of 166. Since the number of Mahometans counted at the censuses of 1890, 1895, and 1900 averaged 15,308, there is not the least doubt that only a small fraction of the actual births has all the time been included in the statistics.

Since the Greek-Orthodox population constituted 98.5 per cent or more of the population according to each of the censuses taken from 1884 to 1910, not too much stress must be laid upon the deficiencies in the birth statistics of the population adhering to other religions. As, moreover, the reported "births" were quite numerous throughout this period we think that on the whole the

<sup>133</sup> See *Statistique du Royaume de Serbie*, Vol. XVII, p. LVII; Vol. XXI, p. LXIV.

<sup>134</sup> See *Statistique de la Serbie*, Vol. XVI, pp. 272-273; *Statistique du Royaume de Serbie*, Vol. XV, p. CXXVIII; Vol. XXI, p. LX.

Serbian statistics from 1862 on convey a fairly complete picture and have therefore included them in our general tables.

Through the Treaty of Berlin of 1878, Turkey ceded four provinces with 299,640 inhabitants to Serbia. Otherwise the territory of the kingdom remained unchanged during the period under consideration (1862-1912).

*Bosnia-Hercegovina.* Birth statistics seem to have been inaugurated in Bosnia-Hercegovina some years after the occupation of the territory by Austria-Hungary (1878). They were published more or less regularly in the Annual Reports on the Administration of Bosnia and the Hercegovina issued by the Austro-Hungarian Ministry of Finance. Although, according to the censuses taken from 1879 to 1910, one-third to two-fifths of the population were Mahometans, the administration apparently succeeded in gathering fairly complete birth records; but prior to 1910, out of respect for religious susceptibilities of the Mahometans, no question as to the age of females was asked through the census.<sup>135</sup>

No official compilation of birth statistics covering a series of years seems ever to have been published, and the data for 1902 apparently have not been compiled. Since, moreover, it is doubtful whether the still-born have always been excluded and whether the

POPULATION, BIRTHS, AND BIRTH RATES IN BOSNIA-HERCEGOVINA,  
1886-1914

Period	Mean Population <sup>a</sup> (In thousands)	Yearly Births <sup>b</sup>	Birth Rate
1886-1890.....	1,444	52,044	36.0
1891-1895.....	1,542	61,901	40.1
1896-1900.....	1,639	63,350	38.7
1901-1905.....	1,736	66,528	38.3
1906-1910.....	1,865	77,169	41.4
1911-1914.....	1,998	79,139	39.6

pp.  
Kul.

*Hygiene und Demographie*, Vol. XI, 1916, p. 211. Since Rosale's estimates refer to the civilian population only, we have estimated the military population on the basis of the census results of 1895 (22,944) and 1910 (33,768). The data for 1913-1914 are our own estimates.

<sup>a</sup> For 1886-1905, see Sundbärg, p. 60; for 1906-1914, see *Annuaire International de Statistique*, Vol. II, *Mouvement de la population (Europe)*, p. 33.

<sup>135</sup> See *Die Ergebnisse der Volkszählung in Bosnien und der Hercegovina vom 10. Oktober 1910*, p. XXVII.

births within the military population have been included, we shall confine ourselves to giving here with all reservations a summary table for 1886-1914.

*Croatia-Slavonia*, see Hungary.

## II. SOURCES OF GENERAL TABLES

*Austria.* 1. Pre-war territory. The official statistics (see *Österreichisches Statistisches Handbuch*, Vol. 22, 1903, p. 2, Vol. 35, 1916-1917, p. 3; *Statistische Rückblicke aus Österreich*, Vienna, 1913, pp. 6-7, 9; *Österreichische Statistik*, New Series, Vol. 14, Part 1, p. 7\*) give the estimated mid-year civilian population for the years 1869 to 1913, the yearly births and birth rates for the years ending October 31, 1819, to 1855, the births for the last two months of 1855, the yearly births and birth rates for the calendar years 1856 to 1913, and the quinquennial births and birth rates for 1821-1911. All data refer to the territory of the kingdoms and states represented from 1868 on in the Austrian *Reichsrat*; they, therefore, include the Republic of Crakov annexed in 1846, but do not include Lombardy and Venetia ceded to Italy in 1859 and 1866; nor do they include Bosnia and Herzegovina, and of course not Hungary. The birth data prior to 1881 refer to the civilian population only.

Our tables prior to 1871 comprise only the civilian, but from 1871 on the total, population.

The mean civilian population for 1818-19 has been estimated; for 1819-20 to 1868 it has been taken from *Statistique Internationale du mouvement de la population*, Vol. I, p. 17, for 1869-1870 from *Österreichisches Statistisches Handbuch* 1903, p. 2. The mean total population for 1871-1913 has been computed according to the instructions given in *Österreichisches Statistisches Handbuch* 1916-1917, p. 3.

The births for 1818-19 to 1870 and for 1881-1913 were taken as they appear in *Statistische Rückblicke* and *Österreichische Statistik*. The number for 1871 has been computed by assuming that 700 births occurred within the military population. The births for 1872-1880 were taken from *Statistique Internationale*, Vol. I, p. 17. The data prior to 1856 refer to years ending October 31.

Since in the Austrian official statistics the birth rate prior to 1913 was reckoned as a rate per 1,000 of the population living at the beginning of the year (sometimes also at the end of the year, see *Österreichische Statistik*, New Series, Vol. XIV, Part I, p. 5\*) all birth rates have been computed anew by relating the births to the mean population of the year.

The birth statistics for the war-period are entirely inadequate. Preliminary birth figures have been published for 1914 and 1915 (see *Österreichisches Statistisches Handbuch*, 1916-1917, p. 33), but they do not include Galicia, Bukowina, and Dalmatia and are not complete even within that limited area for 1915. No birth figures whatsoever have been published for any later year.

2. Post-war territory. The official statistics (see *Statistisches Handbuch für die Republik Österreich*, Vol. X, 1929, pp. 12-14; *ibid.*, Vol. XI, 1930, pp. 3, 8-10; *Statistische Nachrichten*, Vol. IX, 1931, pp. 26, 136) give the estimated mid-year population for 1871-1913 and 1919-1930, the yearly births for 1871-1930, the yearly birth rates for 1871-1913 and 1919-1930, and quinquennial data for the mean population, the births, and the birth rates for 1871-1910. All data refer to the present territory.

The mean population for 1871-1930 has been assumed to be equal to the officially estimated mid-year population.

The births have been taken as they appear in the official statistics; but we have included 157 births of 1928, which do not appear in the official totals because the respective schedules were deficient.

The birth rates were computed by relating the number of births to the mean population.

*Bulgaria.* The official statistics (see *Annuaire Statistique du Royaume de Bulgarie*, Vol. IV, 1912, pp. 53-54; *ibid.*, Vol. XXI-XXII, 1929-1930, pp. 43-44; *Bulletin Mensuel de Statistique*, Vol. XIX, 1930, No. 9, p. 5, No. 11, p. 5) give the mean population, the yearly births, and the yearly birth rates for 1881-1929. The data for 1881-1887 refer to Northern Bulgaria only; from 1888 on they include also Southern Bulgaria (Eastern Rumelia) annexed in 1885. For 1913-1915 they exclude Southern Dobrudja ceded to Rumania. From 1916 on, they refer to the present territory.



The population and the births have been taken as they appear in the official sources. The birth rates have been computed by relating the births to the mean population.

*Croatia-Slavonia.* The official statistics (see *Statistisches Jahrbuch der Königreiche Kroatien und Slavonien*, Vol. I, p. 148; *Ungarisches Statistisches Jahrbuch*, New Series, Vol. XX, 1912, p. 28; *Ungarische Statistische Mitteilungen*, Third Series, Vol. 50, pp. 79\*-81\*; *ibid.*, French edition, Vol. 70, pp. 12,\* 44\*-45\*) give the mean yearly population for 1871-1915, the yearly births for 1871-1917,<sup>186</sup> the quinquennial births for 1871-1910, the yearly birth rates for 1871-1917, and the quinquennial birth rates for 1871-1910. The data refer to the territory of Croatia-Slavonia, as constituted in 1868 after the exclusion of the district of Fiume. While all the population data refer to the total population, the birth data prior to 1890 refer to the civilian population only. The data are deficient for 1916-1917.

Our own tables prior to 1881 comprise only the civilian population; from 1881 on they cover the total population.

We have computed the mean population for 1871-1880 from the population figures on December 31, 1870-1880, given in *Statistisches Jahrbuch der Königreiche Kroatien und Slavonien*, Vol. I, p. 6. The mean population for 1881-1900 has been taken from *ibid.*, p. 148, and that for 1901-1915 from *Ungarische Statistische Mitteilungen*, Vols. 50 and 70.

The births for 1871-1900<sup>187</sup> have been taken from *Statistisches Jahrbuch der Königreiche Kroatien und Slavonien*; but in order to take account of the births within the military population, we have included 13.4 per cent of the births within the military population of the entire kingdom, derived for 1881-1882 from *Statistik des Deutschen Reichs*, New Series, Vol. 44, p. 54, and taken for 1883-1890 from *Ungarisches Statistisches Jahrbuch*, 1894, p. 52. The births for 1901-1915 have been taken from *ibid.*, 1912, p. 28, and *Ungarische Statistische Mitteilungen*, Vol. 70, pp. 44\*-47\*; those for 1916-1919 from Bogić, G., *Statistika Radjanja i Umiranja Odojčadi u Hrvatskoj i Slavoniji za Vreme od 1909 do 1919 Godine* (Statistics of Births and Deaths of Children among Croats and Slavonians in the Period from 1909 to 1919), p. 36.

<sup>186</sup> For prior years see p. 82.

<sup>187</sup> The number of births in 1870, including the district of Fiume (with about 800 births), was 84,904; see *Confronti Internazionali 1865-1883*, p. CC.

The birth rates for 1871-1915 have been computed by relating the number of births to the mean population.

*Czechoslovakia.* The official statistics (see *Statistisches Handbuch der Čechoslovakischen Republik*, Vol. III, 1928, pp. 319-321; *Mitteilungen des Statistischen Staatsamtes der Čechoslovakischen Republik*, Vol. X, 1929, p. 477; Vol. XI, 1930, pp. 653, 677-678) give the mean total population for each year from 1923 to 1929, and the yearly births and birth rates for 1901-1929. The data refer to the present territory but exclude for 1901-1919 and for the first months of 1920 parts of the districts of Weitra and Feldsberg, and for 1901-1910 also the district of Hultschin.<sup>128</sup> The data for 1919 and 1920 moreover show some insignificant gaps (see *Čechoslovakische Statistik*, Vol. 53, pp. XI, XXXI). The birth data for 1925-1929 are preliminary figures.

All our tables refer to the present territory of the republic. In view of the great demographic differences between the western and the eastern provinces, we give separate data for Bohemia, Moravia, and Silesia on the one hand, and for Slovakia and Carpatho-Russia on the other hand.

Since, aside from the census data,<sup>129</sup> no official population estimates were available for any year prior to 1923, and since the official estimates for 1923-1927 are given merely for the republic and not by provinces, we have estimated ourselves the mean population of the western and of the eastern provinces for each year from 1901 to 1914 and 1920 to 1927 and have submitted this estimate to the Czechoslovakian Statistical Office. This office has kindly revised our figures, supplied an estimate for 1919 and made a new estimate for 1928 and 1929. It is then those unpublished figures furnished by the Statistical Office for 1901-1914 and 1919-1929 which we use in our tables.

The yearly births for 1901-1918 have been taken from *Statistisches Handbuch*, Vol. III, pp. 320-321. Account has been taken of the changes in frontiers (Weitra, Feldsberg, Teschen, Hultschin) by adding to the official totals for the eastern provinces 0.75 per cent for 1901-1910 and 0.23 per cent for 1911-1918. The yearly births for 1919-1924 have been taken from *Statistische*

<sup>128</sup> See pp. 73-74.

<sup>129</sup> See p. 73.

*Mitteilungen*, Vol. XI, pp. 677-678. Account has been taken of the changes in frontiers by adding to the official totals for 1919 an estimated number of 440 births for the districts of Weitra and Feldsberg and the 1,430 births in the district of Hultschin reported in *Statistisches Handbuch*, Vol. II, p. 429, for 1920 an estimated number of 450 births in view of partial gaps in the reports of those districts. The Statistical Office to which we submitted our whole series of birth figures has increased our estimates of the births in the western provinces by 367 for 1919 and by 412 for 1920 in view of supplementary data received from two districts after the compilation of the statistics of those years. It also has kindly furnished the unpublished final birth figures for 1925-1929.

The birth rates for 1901-1914 and 1919-1929 have been computed by relating the number of births to the mean population; those for 1915-1918 have been taken from *Statistisches Handbuch*, Vol. III, p. 319.

*Danzig.* The official statistics (see *Danziger Statistische Mitteilungen*, Vol. VI, 1926, p. 147; *ibid.*, Vol. X, 1930, pp. 67-68) give the estimated mean yearly population, the yearly births, and the yearly birth rates for 1920-1929.

The population and birth data have been taken as they appear in the official sources. The birth rates have been computed by relating the number of births to the mean population.

*Estonia.* The official statistics (see *Eesti Demograafia*, Vol. IV, pp. 18, 43; *Recueil Mensuel du Bureau Central de Statistique de l'Estonie*, No. 106, September 1930, p. 486, No. 112, March 1931, p. 147) give the population on July 1, 1919-1930, the yearly births for 1919-1930, and the yearly birth rates for 1919-1929.

Our tables, which all refer to the present territory of the republic, are confined to the years 1922-1930.<sup>140</sup>

The mean population has been assumed to be equal to the officially estimated mid-year population. The births have been taken as they appear in the official statistics. The birth rates have been computed by relating the births to the mean population.

<sup>140</sup> For prior years, see p. 75.

*Hungary.* 1. Pre-war territory. The official statistics (see *Ungarische Statistische Mitteilungen*, Second Series, Vol. V, pp. 66 \*-67 \*, Third Series, Vol. 50, pp. 79 \*-81 \*, *ibid.*, French edition, Vol. 70, pp. 11 \*, 12 \*, 44 \*-45 \*; *Ungarisches Statistisches Jahrbuch*, New Series, Vol. V, 1897, p. 51, Vol. X, 1902, pp. 45-46, 77, Vol. XX, 1912, p. 28) give the mid-year population for 1881-1915, the births for 1875-1915,<sup>141</sup> and the birth rates for 1881-1915. The birth data prior to 1883 refer to the civilian population.

Our tables prior to 1881 comprise only the civilian population and from 1881 on the total population.

We have computed the mean population for 1871-1880 by starting from the population figures of December 31, 1869-1880, ascertained on the basis of the census data and the birth and death figures for Hungary proper, excluding the district of Fiume, in *Statistisches Jahrbuch für Ungarn*, Vol. X, 1880, I, pp. 98-99, and by assuming that the excess of emigration from that territory was evenly distributed within this eleven-year period. We have added the mean population of Croatia-Slavonia which we have computed from the population figures on December 31, 1869-1880, given in *Statistisches Jahrbuch der Königreiche Kroatien und Slavonien*, Vol. I (Zagreb, 1913), p. 6, and we have likewise added the mean population of Fiume, which we have computed by assuming that the population increased arithmetically between the census dates of 1869 and 1880. The mean population for 1881-1915 has been assumed to be equal to the officially estimated mid-year population of those years. The mean population for 1916-1918 has been estimated on the basis of the official estimates of the mid-year population of Hungary proper, as given in *Publications Statistiques Hongroises*, Third Series, Vol. 70, pp. 44 \*-47 \*, by assuming that the decrease in the entire kingdom was proportionally the same as in Hungary proper.

The yearly births for 1870 have been taken from *Confronti Internazionali* 1865-1883 p. CC; those for 1871-1874 and 1881-1882 from *Statistik des Deutschen Reichs*, New Series, Vol. 44, p. 54; those for 1875-1880 and 1883-1915 from *Ungarische Statistische Mitteilungen*, and *Ungarisches Statistisches Jahrbuch*. The births for 1916-1918 have been computed by adding to the figures for Hungary proper Bogić's figures for Croatia-Slavonia.<sup>142</sup>

<sup>141</sup> For prior data, see p. 82.

<sup>142</sup> See p. 125.

The birth rates have been computed by relating the number of births to the mean population.

2. Post-war territory. The official statistics (see *Revue Hongroise de Statistique*, Vol. IX, 1931, p. 12; *Bulletin statistique mensuel Hongrois*, Vol. XXXIII, 1930, p. 456) give the estimated mid-year population for 1911-1929 and the yearly births and birth rates for 1911-1930. All data refer to the present territory.

The official population estimates since 1920 were based on the natural increase and assumed for December 31, 1930, a population of 8,757,164.<sup>143</sup> But according to the preliminary results of the census of that date, the population amounted to 8,683,740 only.<sup>144</sup> We have therefore made new estimates of the mean population of 1921-1930 by assuming that the excess of emigration over immigration was evenly distributed over those ten years.

The births have been taken as they appear in the official statistics. The birth rates have been computed by relating the births to the mean population.

*Italy.* The official statistics (see *Movimento dello Stato Civile* 1882, p. IX, 1889, p. VI, 1899, p. XII; *Movimento della Popolazione secondo gli atti dello stato civile* 1905, p. XVI, 1907, p. XVI, 1908, p. XIV, 1916, p. VI, 1924, p. XIX, 1925, p. \* 81, 1926, p. \* 41; *Statistica delle Cause di Morte* 1925, p. \* 30; *Bolletino Mensile di Statistica*, 1930, pp. 1049-1051, 1064; 1931, pp. 7, 9) give the yearly population of December 31, 1861-1872, the mean yearly population for 1872-1930, the yearly births and birth rates for 1862-1930, and the quinquennial births and birth rates for 1876-1910. The data refer for 1861 and 1862 to the territory as constituted at the foundation of the kingdom in 1861; they include from 1863 on Venetia and Mantua annexed in 1866 and from 1872 on the province of Rome. For 1871 the population is given also for the province of Rome. For 1917 and 1918 the population and the births are given both for the entire kingdom and for the kingdom excluding the occupied communes,<sup>145</sup> but the birth rates only for the non-occupied area. For 1913-1914, the births are also given for the present territory; for 1922-1923, all data are given

<sup>143</sup> See *Bulletin statistique mensuel Hongrois*, Vol. XXXIII, 1930, p. 456.

<sup>144</sup> See *ibid.*, p. 583.

<sup>145</sup> See pp. 83-84.

both for the pre-war and for the present territory, from 1924 on, only for the present territory.

Our tables cover (1) for 1862-1923 the pre-war territory, excluding for 1862 Venetia and Mantua, and for 1863-1871 the province of Rome; (2) for 1913-1914 and 1922-1930 the present territory.

We have computed the mean population for 1862-1871 on the basis of the official estimates for December 31, 1861-1871, published in *Movimento* 1882, 1889; we have taken it for 1872-1929 from the official estimates given in *Movimento* 1899, 1905, 1924, 1926, *Statistica delle Cause di Morte* 1925, *Bolletino*, 1930, 1931.

The births have been taken from *Movimento* 1882, 1889, 1905, 1925, *Bolletino* 1930, 1931.

The birth rates have been computed by relating the number of births to the mean population.

*Latvia.* The official statistics (see *Annuaire Statistique de la Lettonie*, Vol. VII, 1926, p. 3, Vol. X, 1929, p. 7; *Bulletin Mensuel*, Vol. VI, p. 361) give the yearly births for 1921-1930 and the yearly birth rates for 1921-1929.

We have excluded from our tables as incomplete the data for 1921.<sup>146</sup> All data given refer to the present territory of the republic.

We have made a tentative estimate of the mean population for each year from 1922 to 1929 and have submitted this estimate to the Latvian Statistical Office which was kind enough to revise it. For 1930 we have used the estimate of the Italian Central Institute of Statistics given in *Notiziario Demografico*, Vol. IV, 1931, p. 408.

The yearly births for 1922-1930 have been taken from *Annuaire Statistique de la Lettonie* and *Bulletin Mensuel*.

The birth rates for 1922-1930 have been computed by relating the number of births to the mean population.

*Lithuania.* The official statistics (see *Annuaire Statistique de la Lithuanie*, Vol. I, 1924-1926, p. 30; [Vol. II], 1927-1928, pp. 2, 14; *Bulletin de Statistique [de la Lithuanie]* 1930, No. 2, p. 40, 1931, No. 2, pp. 38, 40) give the estimated population of January 1, 1923-1931, the yearly births for 1915-1930, and the yearly birth rates for 1915-1930. All data refer to the present territory.

We have computed the mean population for 1915-1921 on the basis of the official birth and death figures and birth and death rates of those years; for 1922-1930 on the basis of the population estimates for January 1, 1922-1931, published in *Aperçu de la*

<sup>146</sup> See p. 84

*démographie des divers pays du monde*, 1929, p. 19, *Annuaire Statistique de la Lithuanie*, 1927-1928, p. 2, and *Bulletin de Statistique* 1930, No. 2, p. 40, 1931, No. 2, p. 40.

The births have been taken from *Annuaire* 1924-1926, p. 30, 1927-1928, p. 14, *Bulletin de Statistique* 1931, No. 2, p. 38.

The birth rates for 1915-1921 have been taken from *Annuaire* 1924-1926, p. 30; those for 1922-1930 have been computed by relating the number of births to the mean population.

*Poland.* The official statistics (see *Annuaire Statistique de la République Polonaise*, Vol. VIII, 1930, pp. 5, 15; *Informations Statistiques de l'Office Central de Statistique*, Vol. IX, 1931, pp. 306-307) give the population of January 1, 1919-1931 and the yearly births and birth rates for 1919-1930.<sup>147</sup> All data refer to the present territory of the republic.

The mean population has been computed for 1919-1930 from the official figures for January 1, 1919-1931. The births and the birth rates for 1919-1929 were taken as they appear in the official sources.

*Portugal.* The official statistics (see *Anuário Estatístico de Portugal*, 1919, p. 58; *Anuário Demográfico*, 1929, pp. 6, 9, 54, 357; *Boletim Mensal da Direcção Geral de Estatística*, Vol. III, 1931, p. 223) give the estimated population of December 31, 1886-1919, of December 31, 1928, and of 1929, the yearly births for 1886-1930, and the yearly birth rates for 1886-1929. All data include the Azores and Madeira.

The official estimates for December 31, 1912-1919, proved to be inadequate. They are based on the assumption that the population increased in each of the years 1912-1919 by 48,811, which was the average yearly increase in 1901-1911 when the average yearly natural increase was 68,100. This assumption may have seemed justified for the years 1912-1917 when the average yearly natural increase was 70,400. But it was evidently erroneous for the year 1918 when deaths exceeded births by 70,300, and for 1919 when the natural increase was only 13,300. As a matter of fact, the official estimate for December 31, 1919, runs as high as 6,350,544, while on December 31, 1920, the population, according

<sup>147</sup> For prior years, see pp. 89-90.

to the census, was only 6,032,991. We have, therefore, estimated ourselves the mean population for 1912-1920<sup>148</sup> by taking as a basis the official data of births and deaths and by assuming that the large excess of emigration revealed by the census of 1920 was evenly distributed over the nine preceding years.

No official population estimates have been published for 1921-1927 but the official birth rates indicate that the Statistical Office assumed a very slow increase. The official estimates for December 31, 1928, and for 1929 do not run higher than 6,199,604 and 6,222,304 respectively. Since on December 31, 1930, the population according to the census was 6,660,852, the official estimates for the preceding years were far too low. We have again estimated the mean population for the intercensal years by taking as a basis the official data of births and deaths and by assuming that the excess of emigration revealed by the census of 1930 was evenly distributed over the ten preceding years.

We have taken the births as they appear in the official sources.

We have computed the birth rates by relating the number of births to the mean population. Our birth rates for the years immediately preceding 1920 and 1930, of course, differ widely from the official birth rates.

*Rumania.* The official statistics (see *Mouvement de la population de la Roumanie en 1893*, p. IV; *Résultats définitifs du dénombrement de la population 1899*, p. XIX; *Annuaire Statistique de la Roumanie 1904*, p. 38, *ibid.*, 1929, pp. 16, 26; *Bulletin Statistique de la Roumanie* [Vol. X], 1909-1910, p. 122) give the estimated population for December 31, 1859-1915 and 1919-1929, the yearly births for 1870-1915<sup>149</sup> and 1919-1928, and the yearly birth rates for 1899-1915 and 1920-1928. The data refer on the whole to the territory of the years specified. They thus excluded Bessarabia from 1879 on but apparently included the Dobrudja only from 1880 on (see Colesco, *Population de la Roumanie*, p. 43; *Bulletin de l'Institut international de statistique*, Vol. VII, Second part, p. 34). They again included Bessarabia from 1919 on, and Transylvania and Bukovina from 1920 on.

The mean population in the areas respectively comprised has been computed for 1859-1915 and for 1920-1928 from the

<sup>148</sup> For prior years, see p. 92.

<sup>149</sup> For prior years, see p. 96.



official figures for December 31, 1859-1915 and 1919-1928, given in *Résultats définitifs du dénombrement* 1899, p. XIX, and *Annuaire Statistique de la Roumanie* 1929, p. 16. In order to compute the mean population for 1879, it became necessary to deduct from the official estimate for December 31, 1879, the population of the Dobrudja (169,000; actually perhaps less, see p. 94). In order to compute the mean population for 1914, it became necessary to add to the official estimate for December 31, 1913, the 273,090 inhabitants of Southern Dobrudja annexed in 1913 (see *Bulletin Statistique de la Roumanie*, Vol. XII, 1913-1915, p. 430).

The yearly births have been taken as they appear in the official sources, with the exception of the figure for 1878 which was taken from Colesco, p. 39.

The birth rates have been computed by relating the births to the mean population.

*Russia.* 1. Pre-war territory. The Statistical Central Committee of Russia has published for each year from 1867 to 1910 birth data for the 50 provinces of European Russia proper, that is excluding Poland and Finland, but excluding also the Kirghiz and Kalmyk steppes.<sup>100</sup> Those figures have recently been revised and supplemented for 1911-1914 by the Central Statistical Office of the Ukraine in collaboration with the Demographic Institute of the Ukrainian Academy of Sciences. (See *Statistique de l'Ukraine* Series I, No. 47, pp. VII, 9.)

The mean population for 1867-1911 has been taken from Novoselsky, p. 25; that for 1912 from Roesle, p. 276; that for 1913 has been computed from *Annuaire Statistique (de la Russie)*, 1922 et 1923, Part I, p. 350; that for 1914 has been estimated.

The births have been taken as they appear in *Statistique de l'Ukraine*, No. 47, p. 9.

The birth rates have been computed by relating the number of births to the mean population.

2. Post-war Territory. The official statistics (see *Mouvement de la population de l'URSS en 1923-1925*, pp. 2-17; *ibid.*, 1926, pp. 46-47; *Abrégé des données statistiques de l'Union des Républiques Socialistes Soviétiques* 1925, pp. 20-21; *Données statistiques*

<sup>100</sup> See p. 100. For birth statistics of the Orthodox population of the Russian Empire in 1801-1866 and for birth statistics of Caucasus and Siberia in 1892-1911, see pp. 100-101.

YEARLY BIRTH RATES, 1819-1930  
1. 1819-1892

Year*	Austria (1)	Year	Austria (1)	Bulgaria	Hungary	Croatia- Slavonia	Italy	Rumania	Russia (Europe)	Serbia	Spain
1819.....	44.3	1856	36.5	.....	.....	.....	.....	.....	.....	.....	.....
1820.....	42.9	1857	40.1	.....	.....	.....	.....	.....	.....	.....	.....
1821.....	41.4	1858	39.8	.....	.....	.....	.....	.....	.....	.....	.....
1822.....	38.5	1859	40.7	.....	.....	.....	.....	.....	.....	.....	.....
1823.....	39.6	1860	38.2	.....	.....	.....	.....	.....	.....	.....	.....
1824.....	37.4	1861	37.4	.....	.....	.....	38.1	.....	.....	40.8	.....
1825.....	40.3	1862	38.1	.....	.....	.....	39.3	.....	.....	43.8	.....
1826.....	39.6	1863	40.6	.....	.....	.....	38.0	.....	.....	46.4	.....
1827.....	39.0	1864	38.0	.....	.....	.....	38.7	.....	.....	46.7	.....
1828.....	38.0	1865	37.9	.....	.....	.....	39.2	.....	.....	45.7	.....
1829.....	36.1	1866	36.8	.....	.....	.....	36.8	.....	51.2	44.9	.....
1830.....	38.0	1867	38.1	.....	.....	.....	35.5	.....	48.8	45.7	.....
1831.....	35.6	1868	38.1	.....	.....	.....	37.3	.....	49.7	45.3	.....
1832.....	36.6	1869	39.5	.....	.....	.....	37.0	.....	49.2	44.9	.....
1833.....	40.4	1870	39.8	.....	43.0	41.6	37.1	.....	51.0	43.2	.....
1834.....	39.3	1871	38.8	.....	40.9	38.2	38.0	32.6	50.0	39.1	.....
1835.....	38.5	1872	38.9	.....	42.7	45.5	36.4	.....	52.3	42.3	.....
1836.....	37.8	1873	39.6	.....	43.1	43.2	35.0	34.3	51.4	42.0	.....
1837.....	39.7	1874	39.5	.....	45.8	46.5	37.8	38.9	51.5	46.2	.....
1838.....	37.9	1875	39.8	.....	46.2	48.2	39.3	37.2	50.6	41.6	.....
1839.....	38.0	1876	39.0	.....	43.6	44.1	37.1	35.6	49.6	38.3	.....
1840.....	38.6	1877	38.6	.....	43.1	43.5	36.3	32.7	47.3	39.6	36.1
1841.....	38.3	1878	38.4	.....	46.0	46.6	37.9	38.0	50.2	39.6	.....
1842.....	41.2	1879	39.1	.....	43.1	44.1	34.0	37.7	49.8	40.9	35.8
1843.....	39.3	1880	37.5	.....	42.9	42.6	38.1	41.9	49.1	40.2	35.5
1844.....	39.7	1881	37.6	.....	43.8	43.1	37.1	40.6	52.4	47.9	37.1
1845.....	39.5	1882	39.1	.....	45.6	45.0	37.2	43.2	50.6	47.0	36.2
1846.....	37.0	1883	38.2	.....	44.8	45.0	39.0	43.5	51.0	48.1	36.7
1847.....	36.0	1884	39.7	.....	45.9	47.3	37.0	42.5	50.0	47.1	36.3
1848.....	32.7	1885	37.7	.....	45.8	47.3	38.9	42.5	49.5	42.4	38.7
1849.....	39.9	1886	38.1	.....	45.9	47.3	38.9	41.3	49.9	46.9	39.1
1850.....	39.6	1887	38.1	37.5	43.8	44.5	37.5	42.7	51.6	46.2	38.4
1851.....	39.5	1888	38.1	36.5	43.7	44.7	38.3	40.9	50.3	44.6	38.4
1852.....	37.5	1889	38.1	34.9	40.3	39.3	35.8	31.7	49.6	40.7	34.4
1853.....	38.9	1890	36.5	38.9	42.3	42.7	37.2	42.6	50.6	45.3	35.3
1854.....	37.2	1891	38.4	35.8	40.4	40.9	36.2	39.1	46.0	42.6	35.8
1855.....	32.2	1892	36.1	.....	.....	.....	.....	.....	.....	.....	.....

(1) Pre-war territory.  
(2) Present territory.  
\* Year ending October 31.

YEARLY BIRTH RATES, 1819-1930  
2. 1893-1930

Year	Austria (1)	Austria (2)	Bul- garia	Czechoslovakia			Dan- mark	Hun- gary (1)	Hun- gary (2)	Croatia- Slo- venia	Italy (1)	Italy (2)	Lat- via	Lith- uania	Po- land	Portu- gal	Rus- sia	Rumania	Serbia	Spain
				West	East	Re- public														
1893	38 0	31 6	34 9					42 6	42 3	42 3	36 5						40 7	48 8	42 8	35 6
1894	38 8	31 4	37 6					41 8	42 7	43 5	35 5						41 1	49 2	42 8	34 8
1895	38 1	31 9	40 2					40 5	43 5	43 5	34 9						42 6	50 1	44 3	35 0
1896	37 6	31 9	43 9					40 5	41 2	41 2	34 2						41 0	50 6	41 5	35 1
1897	37 7	31 5	43 9					37 7	39 5	39 5	33 5						38 9	48 6	42 3	34 1
1898	36 3	31 5	39 1					37 7	39 5	39 5	33 5						38 9	48 6	39 3	33 3
1899	37 3	31 5	40 5					39 3	41 6	41 6	33 9						42 4	49 3	39 8	34 2
1900	37 3	31 8	42 2					39 3	40 4	40 4	33 0						39 1	49 3	42 4	33 8
1901	36 6	31 4	37 5	34 9	40 0	36 2		37 8	39 2	39 2	32 5						39 6	47 9	38 3	34 8
1902	37 1	31 5	38 8	35 4	40 8	36 3		38 9	39 2	39 2	31 7						38 3	47 9	38 3	35 6
1903	36 2	30 2	40 9	33 5	38 2	34 7		36 9	39 2	39 2	31 7						40 4	48 1	40 6	36 2
1904	35 6	30 2	42 4	33 4	39 3	34 9		37 4	40 0	40 0	32 9						40 4	48 1	40 6	34 1
1905	33 9	28 9	43 5	31 2	37 9	33 0		38 1	40 1	40 1	32 7						38 5	45 0	37 4	34 9
1906	33 0	28 9	43 7	31 4	37 5	33 6		36 5	39 3	39 3	32 7						40 2	47 1	41 6	33 9
1907	32 0	27 8	43 7	31 4	37 5	33 6		37 0	39 3	39 3	32 7						41 6	44 8	37 0	33 6
1908	33 4	27 5	40 7	30 9	39 2	33 0		37 7	37 0	37 0	32 7						41 4	44 8	38 7	32 0
1909	32 5	26 7	40 2	28 7	36 5	31 4		35 0	35 0	35 0	31 5						39 6	45 0	38 9	32 5
1910	31 3	25 3	40 2	28 7	35 2	30 4		35 0	35 0	35 0	31 5						42 7	44 7	44 7	31 6
1911	25 4	24 1	35 1	25 4	31 7	27 0		34 5	35 7	35 7	31 7						43 9	43 7	30 4	30 4
1912	29 7			26 3	36 3	28 9		34 7	35 7	35 7	31 7						43 9	44 7	30 4	30 4
1913						20 6		23 8	32 6	32 6	30 5						42 5	44 7	29 7	29 7
1914						20 6		23 8	32 6	32 6	30 5						42 5	44 7	29 7	29 7
1915						15 7		16 2	17 0	17 0	13 1						40 8		29 8	29 8
1916						15 7		16 2	17 0	17 0	13 1								29 8	29 8
1917						15 7		16 2	17 0	17 0	13 1								29 8	29 8
1918						15 7		16 2	17 0	17 0	13 1								29 8	29 8
1919						15 7		16 2	17 0	17 0	13 1								29 8	29 8
1920						15 7		16 2	17 0	17 0	13 1								29 8	29 8
1921						15 7		16 2	17 0	17 0	13 1								29 8	29 8
1922						15 7		16 2	17 0	17 0	13 1								29 8	29 8
1923						15 7		16 2	17 0	17 0	13 1								29 8	29 8
1924						15 7		16 2	17 0	17 0	13 1								29 8	29 8
1925						15 7		16 2	17 0	17 0	13 1								29 8	29 8
1926						15 7		16 2	17 0	17 0	13 1								29 8	29 8
1927						15 7		16 2	17 0	17 0	13 1								29 8	29 8
1928						15 7		16 2	17 0	17 0	13 1								29 8	29 8
1929						15 7		16 2	17 0	17 0	13 1								29 8	29 8
1930						15 7		16 2	17 0	17 0	13 1								29 8	29 8

(1) Pre-war territory  
(2) Present territory

## POPULATION AND BIRTHS BY PERIODS, 1819-1930

Period*	Austria (1)	Period	Austria (1)	Austria (2)	Bulgaria	Czechoslovakia			Denmark	Estonia
						West	East	Republic		
Mean Population										
1810-1890	13,760	1861-1865	19,279	4,646						
1891-1895	14,449	1866-1870	19,956							
1896-1899	15,365	1871-1875	21,730	5,075						
1831-1835	15,719	1876-1880	22,530	5,303	3,201 <sup>a</sup>					
1836-1840	16,329	1881-1885	23,408	5,563	3,345					
1841-1845	17,155	1886-1890	24,351	5,856	3,604					
1846-1850	17,532	1891-1895	25,465	6,104	3,888					
1851-1855	17,858	1896-1900	26,769	6,485	4,185					
1856-1860	18,322	1901-1905	27,948	6,820 <sup>a</sup>	4,307					
		1906-1910	28,880 <sup>a</sup>	6,420 <sup>a</sup>	4,624					
		1911-1914		6,479	4,861					
		1920-1921		6,538	5,040					
		1922-1923		6,602	5,200					
		1924-1925		6,670	5,336					
		1926-1928		6,700	5,766					
		1929		6,713						
		1930				9,558	3,360	12,924		1,107
						9,596	3,505	13,359		1,116
						10,178	3,541 <sup>a</sup>	13,743		1,116
						9,998	3,603	13,991	352	
						10,317	3,691	14,128	378	
						10,471	3,811	14,298	383	
						10,580	4,018	14,406	397	
Average Yearly Births										
1819-1890	599,901	1861-1865	750,492	160,447						
1891-1895	577,985	1866-1870	767,053	165,180						
1896-1899	563,333	1871-1875	823,171	166,763						
1831-1835	598,540	1876-1880	841,119	168,763						
1836-1840	626,696	1881-1885	861,795	169,707	116,172 <sup>b</sup>					
1841-1845	679,392	1886-1890	885,311	170,707	125,396					
1846-1850	649,994	1891-1895	912,009	176,328	147,813					
1851-1855	651,212	1896-1900	948,914	184,507	158,141					
1856-1860	715,532	1901-1905	954,578	187,071	176,163					
		1906-1910	941,917	180,446	164,753					
		1911-1914		168,129	121,689					
		1915-1919		105,588	104,804					
		1920-1921		148,891	131,406					
		1922-1923		148,922	137,401					
		1924-1925		138,901	131,406					
		1926-1928		120,960	127,224					
		1929		112,121	121,562					
		1930		112,601	123,243					
					321,847	132,040	453,887			
					308,165	131,136	434,301			
					276,048	128,100	404,208			
					137,401	137,171	283,552			
					131,406	130,092	331,579	11,188		
					227,224	132,436	350,660	9,793		22,301
					212,562	138,999	341,561	9,845		20,943
					208,064	123,243	326,307	8,968		19,915
								8,852		19,110
(1) Pre-war Territory	(2) Present Territory	* 1819-1855 years ending October 31			* 1858-1890 only			* 1911-1913 only		
								* 1919 only		



*de la santé publique et de l'organisation du secours médical dans l'URSS durant 1924-1925*, p. 10; *Statisticheskii Spravochnik SSSR* 1928, pp. 76-79) give the estimated mean population for 1926 and the yearly births and birth rates for 1923-1927. For further details see pp. 104-116.

*Serbia.* The official statistics (see *Statistique de la Serbie*, Vol. VIII, pp. 44-45, Vol. XV, p. 18, Vol. XVII, p. LXIX; *Annuaire Statistique du Royaume de Serbie*, Vol. XI, 1906, pp. 34-35, 229, Vol. XII, 1907-1908, p. 35, Vol. XIII, 1909-1910, pp. 35-36, 91) give the estimated yearly population for 1862-1910, the yearly births for 1862-1910, and the yearly birth rates for 1862-1910. From 1874 on, the population data evidently refer to December 31 (see *Statistique du Royaume de Serbie*, Vol. XV, p. 18). For prior years they probably were to represent the mean yearly population (see *Statistik des Deutschen Reichs*, New Series, Vol. 44, pp. 66-67, 70). Prior to 1876 they are said to exclude the Mahometan population (see *Confronti Internazionali* 1865-1883, p. XCIX). From 1879 on, they include the territory ceded to Serbia through the Treaty of Berlin.

The population of the years 1862-1873, as given in the official statistics, has been considered as the mean population for those years. The mean population for 1874-1910 has been computed from the official estimates for December 31, 1874-1910. In order to compute the mean population for 1879, it became necessary to add to the official estimate for December 31, 1878, the population of the four provinces ceded by Turkey (299,640). Since the officially estimated population for December 31, 1910, was lower by 15,995 than the census figure of that date, we have distributed the difference evenly over the five years 1906-1910.

The births have been taken as they appear in the official statistics.

The birth rates have been computed by relating the births to the mean population.

*Spain.* The official statistics (see *Reseña Geográfica y Estadística de España*, Vol. II, 1912, p. 22; *Movimiento de la Población de España*, 1921-1923, pp. IX, XI, *ibid.*, 1924-1926, pp. X-XII, 488-490; *Boletín Demográfico de España*, Fourth Period, No. 12, p. 2, *ibid.*, No. 16, p. 2, *ibid.*, No. 20, p. 2, *ibid.*, No. 22, p. 2) give

the population on December 31, 1857-1929, the yearly births for 1878-1926,<sup>151</sup> the yearly birth rates for 1921-1926, and the quinquennial birth rates for 1901-1925. All data refer to the mainland and the Balearic and Canary Islands.

The mean population for 1878-1929 has been computed from the official figures for December 31, 1877-1929. The mean population for 1930 has been estimated.

The births for 1878-1926 have been taken as they appear in the official sources; those for 1927-1929 have been kindly furnished in advance of publication by the Spanish Central Statistical Office; those for 1930 (preliminary) have been taken from *Notiziario Demografico* (published by the Italian Central Institute of Statistics), Vol. IV, 1931, p. 266.

The birth rates have been computed by relating the number of births to the mean population.

<sup>151</sup> For prior years, see p. 117.

## APPENDIX B

### WOMEN OF CHILD-BEARING AGE

The tables on pages 141-143 give the total population, the women of child-bearing age (15-49 years),<sup>1</sup> and the percentage of such women in every country of Eastern and Southern Europe for which adequate official data are available. The women whose age was not reported at the census have been proportionally assigned. As to the sources from which the data were taken, the following may be said:

*Austria.* 1. Pre-war territory. 1869, see Bertillon, p. 71; 1880, see *Österreichische Statistik*, Vol. II, p. 565; 1890, see *ibid.*, Vol. XXXII, Part 3, p. xi; 1900, see *ibid.*, Vol. LXIII, Part 3, p. 33; 1910, see *ibid.*, New Series, Vol. XIV, Part 1, p. 45\*.

2. Present territory. 1910, see *Statistisches Handbuch für die Republik Österreich*, Vol. VIII, 1927, p. 7; 1922 and 1927, see *Statistische Nachrichten*, Vol. VIII, 1930, p. 82.

*Bosnia-Herzegovina.* 1910, see *Die Ergebnisse der Volkszählung in Bosnien und der Herzegovina vom 10. Oktober 1910*, pp. XXIX, XXXV.

*Bulgaria.* 1887-1900, see *Annuaire Statistique de Bulgarie*, Vol. II, 1910, pp. 51-53; 1905-1926, see *ibid.*, Vols. XXI-XXII, 1929-1930, pp. 29-30.

*Croatia-Slavonia.* 1869-1910, same as Hungary.

*Czechoslovakia.* 1921, see *Čechoslovinská Statistik*, Vol. 9, p. 104\*.

*Danzig.* 1923, see *Aperçu de la démographie des divers pays du monde*, 1925, p. 75.

<sup>1</sup> For some statistical evidence why high figures for mothers over 50 years of age must be mistrusted, see Vol. I, p. 102. The author has since been informed in Spain that in the case of illegitimate children the parents of the girl there sometimes have their grandchild registered as their own legitimate child. This must, of course, unduly increase the number of old "mothers" appearing in the Spanish birth statistics.



## WOMEN OF CHILD-BEARING AGE, 1857-1930

Date	Total Population	Women 15-49 Years	Per Cent
<i>Austria</i>			
Dec 31, 1869	20,394,980	5,396,399	26 46
Dec 31, 1880	22,144,244	5,701,086	25 75
Dec 31, 1890	23,895,413	6,080,737	25 45
Dec 31, 1900	26,150,708	6,550,847	25 05
Dec 31, 1910	28,571,934	7,106,172	24 87
Dec 31, 1910 <sup>a</sup>	6,645,984	1,730,993	26 05
Dec 31, 1922	6,533,702	1,879,370	28 76
Dec 31, 1927	6,678,527	1,945,386	29 13
<i>Bosnia-Herzegovina</i>			
Oct 10, 1910	1 931,802	423,982	21 95
<i>Bulgaria</i>			
Dec 31, 1887	3 154 375	677,917	21 49
Dec 31, 1892	3,310 713	701,721	21 20
Dec 31, 1900	3 744,283	817,795	21 84
Dec 31, 1905	4 035,575	891 428	22 09
Dec 31, 1910	4 337,513	968 764	22 33
Dec 31, 1920	4 846,971	1,204,393	24 85
Dec 31, 1926	5 478,741	1,397,254	25 50
<i>Croatia-Slavonia</i>			
Dec 31, 1869	1 845 764	480,610	26 04
Dec 31, 1880	1 905,295	495,205	25 99
Dec 31, 1890	2,201,927	525,956	23 89
Dec 31, 1900	2,416,304	595,813	24 66
Dec 31, 1910	2,621,954	649,829	24 78
<i>Czechoslovakia, Western Provinces</i>			
Feb 15, 1921	10,005,734	2,808,625	28 07
<i>Czechoslovakia, Eastern Provinces</i>			
Feb 15, 1921	3,607,438	935,670	25 94
<i>Czechoslovakia, Republic</i>			
Feb 15, 1921	13,613,172	3,744,295	27 50
<i>Danzig</i>			
Nov 1, 1923	366,730	103,443	28 21
<i>Estonia</i>			
Dec 28, 1922	1,107,059	310,471	28 04

<sup>a</sup> Present territory

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## WOMEN OF CHILD-BEARING AGE, 1857-1930—Continued

Date	Total Population	Women 15-49 Years	Per Cent
Greece			
May 14, 1870	1,457,894	354,518	24 32
April 27, 1879	1,653,767	399,662	24 17
April 27, 1889	2,187,208	532,611	24 35
Oct 27, 1907	2,631,952	661,325	25 13
Jan 1, 1921	5,021,790	1,285,550	25 60
May 16, 1928	6,204,684	1,634,983	26 30
Hungary			
Dec 31, 1869	15,509,455	3,981,566	25 67
Dec 31, 1880	15,739,259	4,077,643	25 91
Dec 31, 1890	17,463,791	4,293,642	24 59
Dec 31, 1900	19,254,559	4,734,186	24 59
Dec 31, 1910	20,886,487	5,094,295	24 39
Dec 31, 1910 <sup>a</sup>	7,606,971	1,870,147	24 58
Dec 31, 1920	7,980,143	2,186,446	27 40
Italy			
Dec 31, 1861	21,777,334	5,657,803	25 98
Dec 31, 1871	26,801,154	6,786,074	25 32
Dec 31, 1881	28,459,628	7,169,717	25 19
Feb 9, 1901	32,447,474	7,792,299	24 02
June 10, 1911	34,671,377	8,525,145	24 59
Dec 1, 1921	37,142,886	9,537,761	25 68
Dec 1, 1921 <sup>a</sup>	38,710,576	9,945,287	25 69
Latvia			
June 14, 1920	1,596,131	445,523	27 91
Feb 10, 1925	1,944,805	532,639	28 87
Feb 10, 1930	1,900,045	545,182	28 69
Lithuania—Proper			
Sept 17, 1923	1,028,971	556,007	27 40
Merr el Territory			
Jan 20, 1925	141,645	38,281	27 03
Poland (Congress Poland)			
Feb. 9, 1897	9,402,253	2,236,687	23 79
Poland (Republic)			
Sept 30, 1921	25,694,700	6,798,699	26 46

<sup>a</sup> Present territory

WOMEN OF CHILD-BEARING AGE, 1857-1930—*Continued*

Date	Total Population	Women 15-49 Years	Per Cent
Portugal			
Jan. 1, 1864	4,188,410	1,114,174	26 60
Jan 1, 1878	4,550,699	1,182,234	25 98
Dec 1, 1890	5,049,729	1,290,232	25 55
Dec. 1, 1900	5,423,132	1,384,679	25 53
Dec 1, 1911	5,960,056	1,533,354	25 73
Dec 1, 1920	6,032,991	1,607,009	26 64
Rumania			
Dec. 1, 1899	5,956,690	1,417,007	23 79
Dec. 19, 1912	7,234,920	1,719,991	23 77
European Russia Proper			
Jan 28, 1897	93,442,864	22,929,877	24 54
Ukraine, Present Territory			
Jan. 28, 1897	21,013,753	4,917,368	23 40
Dec 17, 1926	29,019,747	7,672,830	26 44
Baltic Provinces			
Jan. 28, 1897	2,386,115	621,587	26 05
European Russia, Present Territory			
Dec. 17, 1926	82,045,588	21,886,051	26 68
Serbia			
Dec 31, 1890	2,161,961	490,066	22 67
Dec. 31, 1900	2,492,882	580,362	23 28
Spain			
May 21, 1857	15,464,340	4,071,107	26 33
Dec 25, 1860	15,673,536	4,237,974	27 04
Dec 31, 1877	16,634,345	4,429,520	26 63
Dec 31, 1887	17,565,632	4,150,335	25 34
Dec 31, 1900	18,618,086	4,706,464	25 28
Dec 31, 1910	19,995,686	4,999,041	25 00
Dec 31, 1920	21,389,842	5,524,960	25 83

*Estonia.* 1922, see *Résultats du recensement de 1922 pour toute la République*, Vol. II, pp. 7-11.

*Greece.* 1870, 1879, see *Statistik des Deutschen Reichs*, New Series, Vol. 44, p. 112; 1889, see Bertillon, p. 151; 1907, see *Annuaire International de Statistique*, Vol. I, 1916, p. 81; 1921, see *Aperçu de la démographie des divers pays du monde*, 1927, p. 74; 1928, see *Bulletin Mensuel de Statistique (de la Grèce)*, Vol. II, 1930, No. 3, p. 1. The data for 1870, 1879, and 1907 refer to the territory of the respective years, those for 1920 and 1928 to the present territory as fixed by the treaty of Lausanne.

*Hungary.* 1. Pre-war territory. 1869-1890, see *Ungarisches Statistisches Jahrbuch*, New Series, Vol. V, 1897, p. 21; 1900-1910, see *Ungarische Statistische Mitteilungen*, Third Series, Vol. 64, pp. 87-89.

2. Present Territory. 1910, 1920, see *Revue Hongroise de Statistique*, Vol. IX, 1931, p. 16.

*Italy.* 1861, see *Censimento Generale 31 Dicembre 1861*, pp. 196, 198, 200; 1871, see *Censimento della Popolazione al 10 Febbraio 1901*, Vol. V, p. 113; 1881-1921, see *Annuario Statistico Italiano* 1929, pp. 26-27.

*Latvia.* 1920, 1925, see *Deuxième recensement de la population de Lettonie, le 10 février 1925*, p. 205; 1930, figures kindly furnished by the Latvian Statistical Office.

*Lithuania.* 1923-1925, see *Population de la Lithuanie, données du recensement du 17 septembre 1923*, p. 53, *Annuaire Statistique de la Lithuanie*, 1927-1928, pp. 6-7.

*Memel Territory*, see Lithuania.

*Poland.* 1897 (Congress Poland), see *Contributions à la statistique de l'ancien Royaume de Pologne*, Vol. I, p. 104; 1921 (Republic), see *Annuaire Statistique de la République Polonaise* 1927, p. 51. The figures for 1921 do not include Upper Silesia, the city of Vilno, and three counties (Vilno-Troki, Oszmiana, and Swięciany) of the province of Vilno. They comprise 25,694,700 of the 27,201,342 inhabitants of the Republic.

*Portugal.* 1864-1920, see *Anuário Estatístico de Portugal* 1926, pp. 16-23. The data include the Azores and Madeira.

*Rumania.* 1899, see *Résultats définitifs du dénombrement de la population 1899*, p. XXXIV; 1912, see *Bulletin de la Statistique de la Roumanie*, Vol. XVI, 1921, Nos. 6-7, p. 31.

*Russia.* 1. Pre-war territory. 1897, European Russia proper (excluding Poland, Finland, and Caucasus), see *Annuaire International de Statistique*, Vol. I, 1916, p. 94, *Contributions à la statistique de l'ancien Royaume de Pologne*, Vol. I, p. 104; Baltic Provinces, see the Russian Census 1897, Vol. XIX, p. VII, Vol. XXI, p. VI, Vol. XLIX, pp. 4-5.

2. Present territory. European RSFSR 1926, see *Vsesoiuznaia perepis naselenia 1926, Kratkie svodki* (All-Union Census of Population, 1926, Brief Summaries), Vol. VII, pp. 14-25.

*Serbia:* 1890, 1900, see *Statistique du Royaume de Serbie*, Vol. I, Part 5, p. LIII, Vol. XXIV, pp. 76-82.

*Spain.* 1857, see *Anuario Estadístico de España 1862-1865*, p. 27 (data refer to 16-50 instead of 15-49 years); 1860 and 1877, see *Statistik des Deutschen Reichs*, New Series, Vol. 44, pp. 106-107; 1887, see *Censo de la Población de España 1887*, Vol. II, pp. 443-444, 457; 1900, see *ibid.*, 1900, Vol. III, pp. 296-297, 301, 310; 1910, see *ibid.*, 1910, Vol. III, pp. 402-403, 407, 416; 1920, see *ibid.*, 1920, Vol. III, p. 276-277, 283, 292. The data for 1857-1887 include the Balearic and Canary Islands and the possessions in North Africa, those for 1900 refer to the mainland only; those for 1910 and 1920 include the Balearic and Canary Islands and the possessions in North and West Africa.

*Ukraine.* 1897, see *Statistika Ukraïni* (Series I), No. 106, p. LIV; 1926, see Ptoukha, *La population de l'Ukraïne jusqu'en 1960*, pp. 21-23.

## APPENDIX C

### AGE OF MOTHERS

The tables on pages 156-160 give the female population and the births by quinquennial age groups from 15 to 50 years in every country of Eastern, Central, and Southern Europe for which adequate official data on the age of the confined are available. Births to mothers under 15 years were included in the age group 15 to 19 years, births to mothers over 50 years in the age group 45 to 49 years. The women whose age was not reported have in both tables been proportionally assigned to the different age groups. So far as census data were used, the sources were identical with those quoted in Appendix B.

*Austria.* 1. Pre-war territory. The average number of females in 1895-1913 has been estimated on the basis of the census data of December 31, 1890, 1900, and 1910, and of the yearly official estimates (decennial age groups) published in *Österreichische Statistik*, New Series, Vol. 8, Part 3, p. 139. The births for 1895-1902, 1904, 1907, 1910, and 1913 have been taken from *Österreichische Statistik*, Vol. XLIX, Part 2, p. 107, Vol. LII, Part 2, pp. 91, 96-97, Vol. LIV, Part 1, pp. 91, 96-97, Vol. LV, Part 3, pp. 59, 64-65, Vol. LXII, Part 3, pp. 59, 64-65, Vol. LXVII, Part 1, pp. 59, 64-65, Vol. LXXII, Part 1, pp. 55, 60-61, Vol. LXXIII, Part 3, pp. 55, 60-61, New Series, Vol. 14, Part 1, pp. 59, 64-65. The age distribution of the confined for the other years has been estimated. The female live-born have been taken from *Österreichisches Statistisches Handbuch*, Vol. XXXI, 1912, p. 15, and *Österreichische Statistik*, New Series, Vol. 14, Part 1, p. 54.

2. Present territory. The number of females in 1928 has been estimated on the basis of the data published for December 31, 1927, in *Statistische Nachrichten*, Vol. VIII, 1930, p. 82. The births and female live-born for 1928 have been taken from *Statistisches Hand-*

*buch*, Vol. XI, 1930, pp. 28-31, the births not appearing in the official statistics on account of deficiencies in the schedules having been included.

*Bulgaria.* The average number of females in 1901-1905, 1906-1910, and 1921-1926, has been assumed to be equal to the average number ascertained on December 31, 1900 and 1905, December 31, 1905 and 1910, and December 31, 1920 and 1926; the average number of females in 1926-1927 has been assumed to be equal to that ascertained on December 31, 1926. The number of births in 1898-1912 and 1918-1927 has been taken from *Mouvement de la population* 1898, Part II, pp. 102-103; *ibid.*, 1899, Part II, pp. 102-103; *ibid.*, 1900, Part II, pp. 100-101; *ibid.*, 1901, Part I, p. 17; *ibid.*, 1902, Part I, p. 15; *ibid.*, 1903, Part I, p. 15; *ibid.*, 1904, Part I, p. 15; *ibid.*, 1905, Part I, p. 15; *ibid.*, 1906, Part I, p. 17; *ibid.*, 1907, Part I, p. 22; *ibid.*, 1912, Part II, p. XXXIV; *ibid.*, 1918, Part II, p. 20; *ibid.*, 1919, Part II, p. 20; *ibid.*, 1920, Part II, p. 20; *ibid.*, 1921, Part II, p. 20; *ibid.*, 1922, Part II, p. 20; *ibid.*, 1923, Part II, p. 20; *ibid.*, 1924, Part II, p. 20; *ibid.*, 1925, p. 22; *ibid.*, 1926, p. 22; *Annuaire Statistique du Royaume de Bulgarie*, Vols. XXI-XXII, 1929-1930, p. 63. The number of female live-born in 1898-1912 and 1918-1927 has been taken from *Annuaire Statistique* 1929-1930, p. 70.

*Croatia-Slavonia.* Same as Hungary.

*Czechoslovakia.* The average number of females in 1920-1921 has been assumed to be equal to that ascertained on February 15, 1921. The live-born for 1919-1924 have been taken from *Čechoslovinská Statistik*, Vol. 53, pp. 68-70, 262-264, Vol. 59, pp. 64-66, 260-262, Vol. 63, pp. 64-66, 260-262. The numbers of female live-born for 1919-1924 have been taken from *Čechoslovinská Statistik*, Vol. 53, pp. 62, 256, Vol. 59, pp. 58, 254, Vol. 63, pp. 58, 254. In ascertaining the number of live-born in 1919 and 1920, account has been taken of the changes in frontiers and of the supplementary returns. The live-born by age of mothers and the female live-born for 1925-1928 have been kindly supplied by the Czechoslovakian Statistical Office.

*Estonia.* The average number of females in 1922-1923 has been assumed to be equal to that ascertained on December 28, 1922. The number of births in 1922-1929 has been taken from *Recueil mensuel du bureau central de statistique de l'Estonie*, No. 18, pp. 76-77, No. 47, Appendix, p. 30, No. 64, p. 117, No. 74, p. 10, No. 85, p. 705, No. 106, p. 501; *Eesti Demograafia*, Vol. II, p. 17, Vol. IV, p. 27; *Aperçu de la démographie des divers pays du monde* 1929, p. 212. The number of female live-born in 1922-1929 has been taken from *Eesti Demograafia*, Vol. IV, p. 63; *Recueil mensuel* No. 106, p. 485.

*Hungary.* The average number of females in 1900-1901 and 1920-1921 has been assumed to be equal to those ascertained on December 31, 1900, and December 31, 1920. The average number of females in 1902-1907 has been estimated on the basis of the census data of 1900 and 1910. As females for 1908-1913 have been entered the females at the census of December 31, 1910. All births in 1900-1912 and the legitimate births in 1913-1925 have been taken from *Ungarische Statistische Mitteilungen*, Third Series, Vol. 7, pp. 150-151, 154-155, 158-159, Vol. 22, pp. 160-161, 164-165, 168-169, Vol. 32, pp. 160-161, 164-165, 168-169, Vol. 50, pp. 258-265, Vol. 70, pp. 38-45, Vol. 74, pp. 64-67. The illegitimate births in 1913-1925 and all births in 1926-1929 have been kindly supplied by the Hungarian Statistical Office. Since for the legitimate live-born of 1900 the mothers from 30 to 49 years have been combined into one group we have assumed that the proportion of the legitimate mothers from 30 to 39 years and from 40 to 49 years was the same as in 1901. The figures for 1929 are preliminary and do not agree with the total given in the table on page 137. The female live-born for 1900-1925 were taken from *Ungarische Statistische Mitteilungen*, Third Series, Vol. 7, pp. 101, 103, 105, Vol. 22, pp. 112, 116, 120, Vol. 32, pp. 112, 116, 120, Vol. 50, pp. 148, 152, 156, 160, Vol. 70 (French edition), p. 33, Vol. 74, pp. 47-53; those for 1926-1929 have been kindly supplied by the Hungarian Statistical Office. The data for 1900-1915 and 1919-1929 refer to the kingdom, those for 1916-1918 to Hungary proper.



*Italy.* The births are not classified according to the age of mothers, but the Central Institute of Statistics has recently published the following estimate for the pre-war territory of Italy:<sup>1</sup>

Age Groups	Females Dec. 31, 1921	Births 1922	Fertility Rates
15-19 .....	1,828,680	45,922	25.11
20-24 .....	1,675,566	235,538	140.56
25-29 .....	1,478,021	298,570	201.99
30-34 .....	1,353,318	255,880	189.06
35-39 .....	1,195,188	172,055	143.94
40-44 .....	1,061,879	92,589	87.19
45-49 .....	950,310	26,992	28.40
Total .....	9,542,962	1,127,444	

The Central Institute has also published three estimates of the number of women of child-bearing age by years of age for December 31, 1921-1961.<sup>2</sup> The third estimate, *C*, which assumes a further decrease of fertility and mortality, is supposed to come on the whole nearest to the truth.<sup>3</sup> This estimate leads to a total population of 43,553,601 for December 31, 1931, while the Central Institute expects that, as a consequence of emigration, etc., the actual population at that date will be only 42,306,000.<sup>4</sup>

According to the estimates *C* for December 31, 1927-1930, the number of women of child-bearing age would be 10,957,060; 11,123,460; 11,275,032; 11,404,819, and the average for the years 1928-1930 would be 11,193,144. This figure certainly is too high and we shall assume that the mean number of females of child-bearing age actually corresponded to that estimated for December 31, 1927.

In estimating the births according to the age of the mothers, we started by assuming that the quinquennial fertility rates in 1928-1930 were the same as those given by the Central Institute for 1922. We arrived thus at a total of 1,295,284 births. Since the reported births numbered 1,065,540, we have reduced the fertility rate in each age group by 17.74 per cent.

<sup>1</sup> See Gini, Corrado, and de Finetti, Bruno, "Calcoli sullo sviluppo futuro della popolazione italiana," *Annali di Statistica*, Series VI, Vol. X, p. 31.

<sup>2</sup> See *ibid.*, pp. 74-77, 84-87, 106-109.

<sup>3</sup> See *ibid.*, p. 130.

<sup>4</sup> See *ibid.*, p. 128. But see also footnote 1, page 57.

## BIRTHS AND FERTILITY RATES IN ITALY, 1928-1930

Age Groups	Women	Fertility Rates Estimate 1922	Computed Births	Estimated Birth Distribution	Estimated Fertility Rates
15-19.....	2,095,779	25.11	52,625	43,261	20.64
20-24.....	1,900,596	140.56	267,148	219,821	115.66
25-29.....	1,727,848	201.99	349,008	287,163	166.20
30-34.....	1,524,945	189.06	288,306	237,189	155.54
35-39.....	1,388,914	143.94	199,920	164,413	118.38
40-44.....	1,231,803	87.19	107,401	88,333	71.71
45-49 ....	1,087,175	28.40	30,876	25,360	23.33
Total.....	10,957,060		1,295,284	1,065,540	

*Latvia.* The mean number of females in 1929 has been estimated on the basis of the census results of February 10, 1930, kindly furnished in advance of their publication by the Latvian Statistical Office. The numbers of births and of female live-born in 1929 have been taken from *Annuaire Statistique de la Lettonie*, Vol. X, 1929, pp. 8, 36.

*Lithuania.* The mean number of females in 1928 has been computed on the basis of the official estimates given in *Annuaire Statistique de la Lithuanie* 1927-1928, pp. 2, 6-7. The number of births for Lithuania proper in 1928 has been taken from *ibid*, pp. 38-39; as to the Memel Territory, we have assumed that the age distribution of the mothers in 1928 was proportionally the same as that published for 1929 in *Statistische Mitteilungen des Memelgebiets* (mimeographed), Vol. X, 1930, p. 349. The number of female live-born in 1928 has been taken from *Annuaire Statistique* 1927-1928, pp. 26-27.

*Poland.* Provinces of Poznań and Pomorze. The average number of females for the years 1921-1926 has been derived from the table contained in Szulc, Stefan, "Tables de mortalité des départements de Poznań et de Pomorze en 1922," *Revue Trimestrielle de Statistique de la République Polonaise*, Vol. V, 1928, pp. 949-950. The births in 1921-1926 have been taken from *Revue Trimestrielle*, Vol. I, 1924, pp. 136, 138, Vol. III, 1926, pp. 146-147, 183-184, 221-222, 637-638, Vol. V, 1928, pp. 714-715. The

births to mothers from 40 to 49 years have been distributed among the mothers of 40-44 and 45-49 years in the proportion of 888 to 112 (see *Revue Trimestrielle*, Vol. VII, 1930, p. 11). The number of female live-born in 1921-1926 has been taken from *Revue Trimestrielle*, Vol. V, 1928, p. 923.

Province of Silesia. The official data for 1921 and 1922 have been disregarded since they refer to the district of Teschen only.

The numbers of births and of female live-born in 1923-1926 have been taken from *Revue Trimestrielle*, Vol. III, 1926, pp. 181, 184, 219, 222, 635, 638, Vol. V, 1928, pp. 712, 715.

Western Provinces. The numbers of births and of female live-born in 1923-1926 have been computed by adding the figures of Poznań, Pomorze, and Silesia, account being taken of the revised totals for 1925 and 1926, published in *Annuaire Statistique de la République Polonaise*, Vol. VIII, 1930, p. 16. The numbers of births and of female live-born in 1927 have been taken from *ibid.*, pp. 22-23.

Southern Provinces. The numbers of births and of female live-born in 1926 have been taken from *Revue Trimestrielle*, Vol. VI, 1929, pp. 1045, 1048, account being taken of the revised total for 1926, published in *Annuaire Statistique* 1930, p. 16. The numbers of births and of female live-born in 1927 have been taken from *ibid.*, pp. 22-23.

Republic. The numbers of births and of female live-born in 1927 have been taken from *ibid.*, pp. 22-23.

*Russia.* 1. Pre-war European Russia proper (excluding Finland, Poland, the Caucasus, and the Kirghiz and Kalmyk steppes in the province of Astrakhan). The average number of females in 1896-1897 has been assumed to be equal to the number ascertained on January 28, 1897. It has been computed on the basis of the data given in *Annuaire International de Statistique*, Vol. I, 1916, p. 94, *Contributions à la statistique de l'ancien Royaume de Pologne*, Vol. I, p. 104, and Novosselsky, p. 24, by assuming that the age distribution published only for decennial age groups from 20 years on was for the quinquennial age groups proportionally the same as that given for the 1897 population of the present territory of the USSR in *Vsesoiuznaia perepis naselenia, 1926, Kratkie svodki* (All-Union Census of Population, 1926, Brief Summaries) Vol. 7, pp. 83-85.

The births in the pre-war times were not classified according to the age of mothers. We have started by assuming that the quinquennial fertility rates in 1896-1897 were the same as in Bulgaria in 1901-1905 and arrived thus at a total of 4,332,600 births. Since the actual births numbered 4,663,715 we might have raised the births in each age group by 7.64 per cent. But since the percentage of married women among the females from 15 to 20 years was much higher in Russia than in Bulgaria, we raised the fertility rate in that age group from 23.5 to 30 per cent and the fertility rate of all other age groups by 7.10 per cent only.

The female live-born were taken from *Statistique internationale du mouvement de la population*, Vol. I, p. 321.

BIRTHS AND FERTILITY RATES IN RUSSIA, 1896-1897

Age Groups	Women Russia	Fertility Rates Bulgaria 1901-1905	Computed Births Russia	Estimated Birth Distribution Russia	Estimated Fertility Rates Russia
15-19.....	4,908,412	23.504	115,368	147,252	30
20-24.....	3,972,459	288.558	1,146,285	1,227,620	309.0
25-29.....	3,631,603	312.236	1,133,917	1,214,387	334.4
30-34.....	3,087,087	309.424	955,219	1,022,979	331.4
35-39.....	2,795,329	204.301	571,088	611,619	218.8
40-44.....	2,497,199	121.031	302,238	323,695	129.6
45-49.....	1,953,529	55.533	108,485	116,163	• 59.5
Total.....	22,845,618		4,332,600	4,663,715	

2. Pre-war Ukraine (present territory). The average number of females in 1896-1897 has been assumed to be equal to the number ascertained on January 28, 1897, as given in *Statistika Ukraini* (Series I), No. 106, p. LIV.

The total number of births and the female live-born have been taken from *ibid.*, p. XIV. In estimating the distribution by age of mothers, we started by assuming that the quinquennial fertility rates in 1896-1897 were the same as those obtained in the estimate above for the whole of European Russia. We arrived thus at a total of 922,800 births. Since the reported births numbered 1,054,655 we have raised the fertility rate in each age group by 6.23 per cent.

## BIRTHS AND FERTILITY RATES IN UKRAINE, 1896-1897

Age Groups	Women Ukraine	Estimated Fertility Rates Russia	Computed Births Ukraine	Estimated Birth Distribution Ukraine	Estimated Fertility Rates Ukraine
15-19.....	1,128,121	30	33,844	35,953	31.9
20-24.....	844,374	309.033	260,939	277,196	328.3
25-29.....	771,475	334.394	257,977	274,050	355.2
30-34.....	659,993	331.374	218,705	232,331	352.0
35-39.....	601,514	218.800	131,611	139,811	232.4
40-44.....	505,993	129.623	65,588	69,674	137.7
45-49.....	405,898	59.463	24,136	25,640	63.2
Total.....	4,917,368		992,800	1,054,655	

3. Baltic Provinces (pre-war). The average number of females in 1896-1897 has been assumed to be equal to the number ascertained on January 28, 1897, as given in the Russian Census of 1897, Vol. XIX, p. VII for Courland, Vol. XXI, p. VI for Liefland, and Vol. XLIX, pp. 4-5 for Estland.

The total number of births and the female live-born have been taken from *Mouvement de la population dans la Russie d'Europe en 1896*, pp. 14-15, *ibid.*, 1897, pp. 14-15. In estimating the distribution by age of mothers we started by assuming that the quinquennial fertility rates for the Baltic Provinces were equal to the quinquennial confinement rates for Finland in 1891-1900. We arrived thus at a total of 85,309 births. Since the actual births numbered 68,490, we have reduced the fertility rate in each age group by 19.715 per cent.

## BIRTHS AND FERTILITY RATES IN THE BALTIC PROVINCES, 1896-1897

Age Groups	Women Baltic Provinces	Confinement Rates Finland 1891-1900	Computed Births Baltic Provinces	Estimated Birth Distribution Baltic Provinces	Estimated Fertility Rates Baltic Provinces
15-19.....	115,282	17.3	1,994	1,601	13.9
20-24.....	111,624	154.8	17,280	13,873	124.3
25-29.....	94,045	211.4	19,881	15,961	169.7
30-34.....	91,736	237.8	21,815	17,514	190.9
35-39.....	78,635	192.7	15,153	12,166	154.7
40-44.....	70,279	115.6	8,124	6,522	92.8
45-49.....	59,986	17.7	1,062	853	14.2
Total.....	621,587		85,309	68,490	

4. European RSFSR (post-war). The average number of females in 1926-1927 has been computed on the basis of the census results of December 17, 1926, as given in *Vsesoiuznaia perepis naselenia 1926*, *Kratkie svodki*, Vol. VII, pp. 14-25, and the mean population figures in table, Appendix, p. 112.

In estimating the distribution by age of mothers, we started by assuming that the quinquennial fertility rates in 1926-1927 were the same as those in the Ukraine in 1926-1927. We arrived thus at a total of 3,321,383 births. Since the reported births, numbered 3,600,072, we have raised the fertility rate in each age group by 8.391 per cent.

BIRTHS AND FERTILITY RATES IN EUROPEAN RSFSR, 1926-1927

Age Groups	Women RSFSR (In thousands)	Fertility Rates Ukraine	Computed Births RSFSR	Estimated Birth Distribution RSFSR	Estimated Fertility Rates RSFSR
15-19.....	5,075	36.7	186,253	201,881	39.8
20-24.....	4,026	253.9	1,022,201	1,107,971	275.2
25-29.....	3,586	264.0	946,704	1,026,140	286.2
30-34.....	2,586	214.9	555,731	602,361	232.9
35-39.....	2,489	163.7	407,449	441,637	177.4
40-44.....	2,032	80.4	163,373	177,081	87.1
45-49.....	1,779	22.3	39,672	43,001	24.2
Total.....	21,573		3,321,383	3,600,072	.

For Moscow the average number of females in 1926-1927 has been assumed to be equal to that ascertained on December 17, 1926, as given in *Vsesoiuznaia perepis naselenia 1926*, Vol. II, pp. 198-199. The births by age of mothers for 1926-1927 have been kindly furnished in manuscript form by the Economics and Statistical Section of the Committee for the Economic Plan of the Division of Moscow. The female live-born have been taken from *Bulletin statistique mensuel de la ville de Moscou*, December, 1929, p. 7.

5. Ukraine (post-war). The average number of females in 1926-1927 has been assumed to be equal to the officially estimated number of January 1, 1927, given in Ptoukha, M., *La population de l'Ukraine jusqu'en 1960*, Report submitted to the 1930 Session

of the International Statistical Institute, pp. 21-23. The number of females in the urban and rural population, and in the population of the cities with over 200,000 inhabitants has been derived from *Vsesoiuznaia perepis naselenia 1926 Kratkie svodki*, Vol. VII, pp. 80-82; *Statistique de la population de l'Oukraïne contemporaine*, pp. 10-11; *Statistika Ukraïni* (Series I), No. 193, p. 2. The numbers of births and of female live-born in 1925-1928 have been taken from *Statistika Ukraïni* (Series I), No. 117, p. 36; No. 154, pp. 26, 40, 49; No. 169, pp. 27, 31, 34; No. 193, pp. 2, 25.

We shall give at this place the data for the various sections of the Ukraine as well as for the city of Moscow since on account of their limited territorial scope they do not fit in our general tables.

WOMEN OF CHILD-BEARING AGE ACCORDING TO  
QUINQUENNIAL AGE GROUPS, 1926-1927

Territory	15 to 19 Years	20 to 24 Years	25 to 29 Years	30 to 34 Years	35 to 39 Years	40 to 44 Years	45 to 49 Years	Total
Ukraine, Rural.....	1,510,690	1,116,705	1,037,502	742,285	699,224	529,552	453,831	6,089,789
Ukraine, Urban.....	345,317	308,045	296,558	205,534	182,067	134,320	115,400	1,587,841
Ukraine, 4 cities.....	88,119	88,954	102,328	72,513	62,251	45,222	38,778	518,165
Moscow.....	102,852	130,491	141,937	100,901	81,850	56,876	48,160	663,087

AVERAGE YEARLY BIRTHS BY QUINQUENNIAL  
AGE GROUPS OF MOTHERS, 1926-1927

Territory	Under 20 Years	20 to 24 Years	25 to 29 Years	30 to 34 Years	35 to 39 Years	40 to 44 Years	45 and more Years	Total	Female Live- Born
Ukraine, Rural.....	56,424	305,507	302,525	178,754	128,885	48,775	11,733	1,032,603	499,789
Ukraine, Urban.....	11,641	58,355	49,861	24,951	15,366	4,602	958	183,534	79,182
Ukraine, 4 cities.....	2,911	13,275	11,494	5,707	2,951	725	119	37,182	17,904
Moscow.....	2,720	19,068	18,949	9,322	4,429	1,216	179	55,881	27,308
Moscow*	2,734	18,085	16,985	8,443	3,470	955	127	50,799	24,683

\*1928-1929\*

FERTILITY RATES BY QUINQUENNIAL AGE GROUPS, 1926-1927

Territory	15 to 19 Years	20 to 24 Years	25 to 29 Years	30 to 34 Years	35 to 39 Years	40 to 44 Years	45 to 49 Years	Total Fertility	Gross Repro- duction Rate
Ukraine, Rural.....	37.3	273.6	201.6	240.8	184.3	92.1	25.9	5,728.4	2.773
Ukraine, Urban.....	33.7	182.6	167.5	121.4	84.4	34.3	8.3	3,180.6	1.530
Ukraine, 4 cities.....	29.7	134.2	112.3	78.7	47.4	16.0	3.1	2,108.8	1.014
Moscow.....	26.4	146.1	133.5	92.4	54.1	21.4	3.7	2,388.3	1.167

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WOMEN OF CHILD-BEARING AGE ACCORDING TO QUINQUENNIAL  
AGE GROUPS, 1895-1929

Period	15 to 19 Years	20 to 24 Years	25 to 29 Years	30 to 34 Years	35 to 39 Years	40 to 44 Years	45 to 49 Years	Total
<b>Austria</b>								
1895-1900 . . .	1,239,837	1,120,595	982,907	1,686,230		1,380,245		6,409,814
1901-1905 . . .	1,307,156	1,165,520	1,021,728	1,782,938		1,432,336		6,689,678
1906-1910 . . .	1,372,737	1,191,869	1,050,202	1,846,035		1,497,408		6,967,341
1913 . . .	1,445,044	1,221,912	1,093,164	1,929,130		1,562,480		7,251,730
1928 . . .	311,744	313,025	307,431	285,483	257,809	246,378	226,208	1,948,078

<b>Bulgaria</b>								
1901-1905	204,559	153,709	128,102	111,911	97,469	85,788	73,074	854,612
1906-1910	209,319	180,509	152,993	118,173	103,788	89,046	76,268	930,068
1921-1926	282,880	243,469	201,448	168,998	150,965	135,924	107,220	1,300,824
1926-1927	297,144	265,367	224,787	175,068	162,084	154,606	118,198	1,397,254

<b>Croatia-Slavonia</b>								
1900-1901 . . .	129,071	105,078	81,653	81,643	76,397	72,152	49,819	595,813
1902-1907 . . .	130,201	108,512	90,268	85,382	74,948	71,978	56,130	617,419
1908-1913 . . .	131,896	113,663	103,190	90,991	72,774	71,717	65,598	649,829

<b>Czechoslovakia, Western Provinces</b>								
1920-1921 . . . . .	539,113	501,296	429,994	377,713	347,095	318,816	294,598	2,808,625

<b>Czechoslovakia, Eastern Provinces</b>								
1920-1921 . . . . .	207,492	180,348	138,796	116,857	106,564	95,525	90,088	935,670

<b>Czechoslovakia, Republic</b>								
1920-1921 . . . . .	746,605	681,644	568,790	494,570	453,659	414,341	384,686	3,744,295

<b>Estonia</b>								
1922-1923 . . . . .	54,715	52,517	46,386	43,550	40,539	36,995	35,769	310,471

<b>Hungary</b>								
1900-1901 . . . . .	989,171	792,825	671,561	654,348	593,081	574,534	458,666	4,734,186
1902-1907 . . . . .	1,012,994	824,168	722,894	669,589	593,728	574,755	480,102	4,878,230
1908-1913 . . . . .	1,048,727	871,183	799,893	692,451	594,699	575,085	512,257	5,094,295
1920-1921 . . . . .	426,006	405,609	340,756	297,775	275,589	240,291	200,420	2,186,446



WOMEN OF CHILD-BEARING AGE ACCORDING TO QUINQUENNIAL  
AGE GROUPS, 1895-1929—*Continued*

Period	15 to 19 Years	20 to 24 Years	25 to 29 Years	30 to 34 Years	35 to 39 Years	40 to 44 Years	45 to 49 Years	Total
<b>Latvia</b>								
1929.....	86,063	90,768	88,614	80,226	69,997	66,008	62,043	543,719
<b>Poland, Provinces of Poznań and Pomorze</b>								
1928.....	147,795	131,370	100,371	74,537	62,404	60,529	51,161	628,167
<b>Serbia</b>								
1921.....	177,581	146,725	113,241	96,037	79,053	75,386	67,774	755,797
1922.....	182,524	151,946	118,919	97,919	81,793	74,700	69,764	777,595
1923.....	186,995	158,279	125,183	99,483	84,461	74,889	70,884	800,174
1924.....	190,140	164,371	131,635	101,286	88,130	74,432	71,962	822,016
1925.....	192,580	169,996	137,542	105,120	90,794	74,642	72,884	843,558
1926.....	195,155	173,873	143,121	110,057	93,021	76,359	72,632	864,218
<b>Ukraine</b>								
1900-1901.....	155,242*	75,917*	103,728	59,558	84,293	41,652	59,972	530,362
1926-1927.....	1,773,820	1,520,273	1,270,488	1,026,957	833,989	688,103	575,040	7,688,670

\*15-20 years. †21-24 years.

*Serbia.* The average number of females in 1900-1901 has been assumed to be equal to that ascertained on December 31, 1900. The number of births and of female live-born in 1900-1910 have been taken from *Statistique du Royaume de Serbie*, Vol. XXI, pp. 54, 186, 324, 462, 604, 746; *Annuaire Statistique du Royaume de Serbie*, 1906, p. 155, 1907-1908, pp. 102-103, 1909-1910, pp. 92-93.

*Spain.* The numbers of births in 1922-1926 have been taken from *Movimiento de la Población de España*, 1921-1923, pp. 126, 266; *ibid.*, 1924-1926, pp. 6, 244, 484. Those for 1927-1929 have been kindly furnished in advance of their publication by the Spanish Statistical Office.

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AVERAGE YEARLY BIRTHS BY QUINQUENNIAL AGE GROUPS  
OF MOTHERS, 1895-1929

Period	Under 20 Years	20 to 24 Years	25 to 29 Years	30 to 34 Years	35 to 39 Years	40 to 44 Years	45 and more Years	Total	Female Live- Born
Austria									
1895-1900	35,271	202,209	260,619		375,031		73,795	947,825	460,413
1901-1905	35,797	205,578	265,750		370,969		76,484	954,578	464,317
1906-1910	38,990	206,423	259,433		362,971		74,100	941,917	458,065
1911-1915	36,810	191,405	239,051		330,919		66,578	864,763	430,080
1916-1920	7,815	29,480	32,370	25,152	15,362		6,707	116,886	56,667

Bulgaria									
1898	4,398	36,049	38,301	28,689	19,508	6,994	4,107	141,046	67,943
1899-1900*	4,368	40,222	40,334	34,073	19,747	10,691	3,965	153,400	73,835
1901-1905	4,808	44,354	39,998	34,628	19,913	10,383	4,058	158,142	76,424
1906-1910	4,918	52,647	47,011	34,282	21,980	11,050	4,275	176,163	85,215
1911-1915	5,361	49,457	55,513	34,021	21,900	10,109	3,846	180,207	87,025
1916-1920	4,363	35,428	40,700	33,611	23,166	9,032	3,537	149,837	72,247
1921-1925	9,927	59,991	54,938	35,257	25,008	10,718	3,842	199,681	96,732
1926-1927	10,761	69,869	54,543	33,045	21,296	9,899	3,619	193,032	93,124

Croatia-Slavonia									
1900-1901	5,834	26,331	23,506	36,198		7,168		96,087	46,588
1902-1907	6,331	27,392	26,038	32,367		7,471		99,599	48,464
1908-1913	6,470	26,532	27,228	32,706		6,696		99,632	48,590
1914	6,934	25,309	26,263	33,390		6,150		98,046	47,783
1915	4,171	15,889	16,760	24,590		5,425		66,835	32,738

Czechoslovakia, Western Provinces									
1919	4,527	41,445	59,625	45,523	28,615	10,039	1,238	191,912	92,543
1920-1921	8,867	64,152	78,722	54,307	31,980	12,008	1,370	251,406	121,486
1922-1924	9,408	65,338	75,240	49,980	28,165	10,342	1,144	239,617	115,987
1925-1928	10,493	61,704	67,694	43,944	22,974	8,133	810	215,752	104,855

Czechoslovakia, Eastern Provinces									
1919	4,380	29,780	31,182	22,952	16,940	6,655	1,287	113,176	53,920
1920-1921	7,423	40,291	35,203	22,418	16,913	6,666	1,260	130,173	62,494
1922-1924	7,800	41,537	39,818	24,193	16,911	6,664	1,119	137,642	66,409
1925-1928	8,276	36,688	37,604	25,287	14,768	5,964	839	129,416	62,606

Czechoslovakia, Republic									
1919	8,907	71,225	90,807	68,475	45,555	17,594	2,525	305,088	146,463
1920-1921	16,290	104,443	113,925	76,725	48,893	18,673	2,630	381,579	183,980
1922-1924	16,708	106,875	115,058	74,173	45,076	17,000	2,263	377,169	182,399
1925-1928	18,769	98,392	135,298	69,231	37,732	14,097	1,649	345,168	167,461

\*Live- and still-born

## AGE OF MOTHERS

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AVERAGE YEARLY BIRTHS BY QUINQUENNIAL AGE GROUPS  
OF MOTHERS, 1895-1929—*Continued*

Period	Under 20 Years	20 to 24 Years	25 to 29 Years	30 to 34 Years	35 to 39 Years	40 to 44 Years	45 and more Years	Total	Female Live- Born
<b>Estonia</b>									
1922-1923	517	4,716	6,418	5,274	3,602	1,549	225	22,301	10,836
1924-1929	519	4,345	6,026	4,717	3,097	1,259	161	20,124	9,775
<b>Hungary</b>									
1900-1901	56,191	205,319	188,004	246,534	46,172	742,220	361,169		
1902-1907.	57,409	212,567	190,382	231,757	44,780	736,855	357,571		
1908-1913	62,324	218,026	201,697	228,282	41,239	751,578	365,714		
1914	65,942	218,184	197,654	227,484	37,947	746,911	363,115		
1915	38,459	135,720	127,719	174,607	35,756	512,261	248,812		
1916-1918	14,428	74,553	77,676	107,180	23,691	297,468	143,631		
1919	11,134	62,317	62,453	77,027	12,184	225,115	108,320		
1920-1921	18,565	84,079	70,051	72,560	11,847	257,102	123,994		
1922-1925	16,497	74,980	68,497	66,285	10,039	236,298	114,327		
1926-1929	17,157	67,579	63,131	64,919	9,261	222,047	107,629		
<b>Latvia*</b>									
1929	837	7,522	11,161	8,882	5,425	1,965	365	36,157	17,562
<b>Lithuania</b>									
1928	1,489	13,858	21,216	16,100	8,029	3,574	779	65,945	32,098
<b>Poland, Provinces of Poznań and Pomorze</b>									
1921	1,782	18,197	28,452	22,840	15,486	7,362	1,022	95,147	45,774
1922	2,304	20,975	29,976	22,262	15,375	6,889	972	98,653	47,119
1923	2,150	20,868	20,346	22,120	15,126	6,765	925	97,300	46,761
1924	2,546	20,231	27,792	21,023	14,321	6,172	834	92,019	44,828
1925	2,390	20,430	29,242	22,213	15,429	6,439	850	96,990	46,661
1926	2,371	19,634	27,547	21,587	14,535	6,338	827	92,839	45,007
<b>Poland, Province of Silesia</b>									
1923-1925	1,469	10,728	11,786	8,384	5,316	2,342		40,025	19,816
1926	1,087	8,346	10,395	7,605	4,740	2,106		34,279	16,491
<b>Poland, Western Provinces</b>									
1923-1925	3,831	31,238	40,580	30,169	20,274	9,630		195,762	65,402
1926	3,459	27,981	37,944	29,193	22,276	9,272		127,125	61,501
1927	3,563	27,193	36,551	28,040	37,922	7,686	988	121,672	58,527

\*Live- and still-born

## 160 THE BALANCE OF BIRTHS AND DEATHS

AVERAGE YEARLY BIRTHS BY QUINQUENNIAL AGE GROUPS  
OF MOTHERS, 1895-1929—Continued

## Poland, Southern Provinces

Period	Under 20 Years	20 to 24 Years	25 to 29 Years	30 to 34 Years	35 to 39 Years	40 to 44 Years	45 and more Years	Total	Female Live- Born
1926.....	9,372	59,312	78,993	52,823	37,788	20,004		258,282	124,416
1927.....	9,187	59,624	80,009	53,700	36,072	15,184	3,156	256,932	124,490

## Poland, Republic

1927.....	33,083	235,831	295,067	203,603	128,638	52,153	9,548	958,283	461,974
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## Serbia

1900-1901.....	12,625 <sup>a</sup>	21,031 <sup>b</sup>	37,840	14,457	11,561	2,421	625	100,560	48,836
1902-1910.....	12,871 <sup>a</sup>	26,273 <sup>b</sup>	39,090	14,117	11,629	2,278	495	106,753	51,940

## Spain

1922-1929.....	13,134	128,057	204,549	157,454	102,606	41,700	6,979	654,479	....
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## Ukraine

1925.....	63,648	361,611	356,906	198,565	145,317	55,580	15,174	1,196,799	578,501
1926-1927.....	73,105	359,694	329,028	230,479	132,076	57,405	14,353	1,198,137	578,951
1928.....	70,728	357,265	327,368	191,942	133,151	47,507	11,312	1,139,268	552,609

<sup>a</sup> Under 21 years.<sup>b</sup> 21 to 24 years.

## APPENDIX D

### LIFE TABLES AND FERTILITY TABLES

#### I. LIFE TABLES

The table on page 162 gives the female survivors at the age from 15 to 50 years in every country of Eastern, Central, and Southern Europe in each period for which official life tables and the number of births by age of mothers are available.

*Austria.* 1901-1905 and 1906-1910, see *Österreichische Statistik*, New Series, Vol. 1, Part 4, pp. 16-17.

*Bulgaria.* 1900-1905, see *Annuaire Statistique du Royaume de la Bulgarie*, Vols. XXI-XXII, 1929-1930, p. 89.

*Croatia-Slavonia.* 1900-1901, same as Hungary.

*Hungary.* 1900-1901, see *Ungarische Statistische Mitteilungen*, Third Series, Vol. 11, p. 300; 1920-1921, see *Revue Hongroise de Statistique*, Vol. VIII, 1930, p. 166.

*Poland* (Provinces of Poznań and Pomorze). 1922, see Szulc, Stefan, "Tables de mortalité des départements de Poznań et de Pomorze en 1922," *Revue Trimestrielle de Statistique de la République Polonaise*, Vol. V, 1928, p. 944.

*Russia* (European). 1896-1897, see Académie des Sciences d'Ukraine, Travaux de l'Institut Démographique, Vol. V, Ptoukha, M., *Mortalité en Russie et en Ukraine*, pp. 186-187.

*Ukraine.* 1896-1897, see *ibid.*, p. 188-189; 1926-1927, kindly furnished in manuscript form by M. Ptoukha.

*Moscow.* 1926-1927, kindly furnished in manuscript form by the Economics and Statistical Section of the Committee for the Economic Plan of the Division of Moscow.

# 162 THE BALANCE OF BIRTHS AND DEATHS

## FEMALE SURVIVORS IN CHILD-BEARING AGE, 1896-1927 (Per 100,000 Live-Born)

Years of Age	Austria		Bul- garia 1900- 1905	Hungary		Croatia- Sla- vonnia 1900- 1901	Poland (Prov Poznan and Pomorze) 1922	Russia (Euro- pean) 1896- 1897	Ukraine		Mos- cow 1926- 1927
	1901- 1905	1906- 1910		1900- 1901	1920- 1921				1896- 1897	1926- 1927	
15	67,398	69,675	68,156	63,320	68,540	61,220	76,946	54,182	61,228	73,408	77,228
16	67,049	69,315	67,655	62,920	68,160	60,830	76,686	53,896	60,850	73,128	77,068
17	66,665	68,929	67,131	62,440	67,707	60,420	76,404	53,590	60,448	72,822	76,898
18	66,245	68,525	66,580	61,950	67,240	59,940	76,100	53,273	60,035	72,448	76,708
19	65,804	68,106	65,999	61,370	66,711	59,370	75,780	52,941	59,614	72,130	76,532
20	65,348	67,672	65,392	60,840	66,223	58,740	75,447	52,601	59,188	71,751	76,304
21	64,876	67,221	64,763	60,240	65,677	58,140	75,104	52,249	58,752	71,351	76,084
22	64,396	66,756	64,115	59,720	65,160	57,590	74,753	51,893	58,303	70,937	75,854
23	63,908	66,279	63,458	59,090	64,608	56,900	74,393	51,605	57,842	70,515	75,617
24	63,418	65,792	62,788	58,530	64,110	56,300	74,018	51,120	57,378	70,090	75,373
25	62,921	65,298	62,104	57,980	63,567	55,660	73,630	50,724	56,902	69,664	75,124
26	62,416	64,797	61,415	57,420	63,047	55,080	73,230	50,323	56,428	69,240	74,869
27	61,908	64,294	60,723	56,820	62,508	54,480	72,822	49,917	55,939	68,819	74,607
28	61,392	63,790	60,023	56,290	62,025	53,910	72,409	49,510	55,467	68,401	74,338
29	60,876	63,284	59,327	55,690	61,444	53,320	71,992	49,102	54,997	67,984	74,061
30	60,358	62,775	58,629	55,270	61,005	52,660	71,569	48,698	54,523	67,568	73,776
31	59,832	62,263	57,935	54,620	60,410	52,220	71,137	48,268	54,046	67,150	73,483
32	59,304	61,747	57,261	54,230	60,003	51,810	70,696	47,843	53,593	66,727	73,182
33	58,789	61,226	56,594	53,590	59,467	51,190	70,246	47,403	53,071	66,298	72,874
34	58,228	60,702	55,930	53,050	58,988	50,540	69,787	46,964	52,560	65,863	72,559
35	57,681	60,172	55,264	52,580	58,557	50,100	69,319	46,510	52,053	65,424	72,237
36	57,126	59,637	54,589	52,010	58,076	49,540	68,845	46,048	51,531	64,982	71,906
37	56,563	59,095	53,927	51,390	57,567	48,910	68,367	45,578	51,004	64,538	71,563
38	55,995	58,547	53,279	50,860	57,118	48,300	67,888	45,104	50,474	64,092	71,204
39	55,424	57,994	52,644	50,160	56,570	47,630	67,411	44,628	49,944	63,641	70,826
40	54,851	57,435	52,005	49,770	56,163	47,200	66,938	44,147	49,406	63,189	70,427
41	54,278	56,869	51,359	49,040	55,575	46,530	66,463	43,653	48,849	62,730	70,007
42	53,704	56,299	50,717	48,680	55,160	46,110	65,983	43,161	48,294	62,281	69,563
43	53,128	55,722	50,077	47,950	54,578	45,400	65,495	42,645	47,685	61,783	69,096
44	52,542	55,138	49,441	47,440	54,118	44,700	64,996	42,116	47,064	61,297	68,612
45	51,956	54,547	48,813	46,950	53,683	44,170	64,484	41,574	46,423	60,804	68,096
46	51,366	53,949	48,190	46,260	53,112	43,440	63,957	41,018	45,787	60,309	67,554
47	50,774	53,340	47,577	45,660	52,560	42,810	63,415	40,449	45,096	59,805	66,985
48	50,180	52,717	46,968	45,150	52,022	42,200	62,863	39,866	44,410	59,300	66,392
49	49,586	52,078	46,364	44,390	51,384	41,350	62,300	39,268	43,707	58,786	65,776
50	48,982	51,418	45,747	43,990	50,889	40,850	61,719	38,663	42,985	58,267	65,135

## II. FERTILITY TABLES

The tables on pages 163-164 give (1) the years lived by 1,000 live-born females in each quinquennial age group from 15 to 50 years according to the life tables; (2) the live-born per 1,000 women for each quinquennial age group from 15 to 50 years; (3) the live-born per 1,000 women for each quinquennial age group from 15 to 50 years adjusted to the age composition derived from the life table

FERTILITY TABLES, 1895-1929

Years of Age	Austria				Bulgaria			Ex onus	Hungary		Croatia Slavonia			
	1901-1905		1906-1910		1913	1928	1901-1905		1906-1910	1921-1926		1922-1927	1900-1901	1920-1921
	1905-1900	1901-1905	1906-1910	1913	1928	1901-1905	1906-1910		1921-1926	1922-1927		1900-1901	1920-1921	
Years Lived by 1000 Live-Born Females														
15-19	3162	3321 85	3435 48	3584	4229	3311 30	3227	3417	3588	3895	3107 6	3372 00	3005 4	
20-24	3056	3207 52	3325 33	3465	4158	3188 72	3076	3285	3523	3801	2928 8	3244 35	2861 3	
25-29	2935	3082 27	3202 02	3350	3955	3018 55	2905	3138	3399	3673	2828 4	3113 05	2710 5	
30-34	2808	2951 61	3074 12	3228	3893	2846 66	2741	2999	3195	3619	2694 1	2886 51	2572 4	
35-39	2674	2818 74	2940 76	3101	3803	2680 74	2585	2868	3063	3510	2556 0	2866 86	2430 3	
40-44	2531	2670 52	2800 19	2965	3787	2520 03	2436	2742	2936	3426	2414 7	2743 47	2284 3	
45-49	2388	2522 94	2650 68	2819	3655	2368 79	2295	2621	2811	3304	2269 3	2613 64	2123 1	
Total	19554	20569 65	21428 56	22492	27780	19069 88	19265	21070	22376	23259	18839 9	20939 88	17987 3	

Live-Born per 1000 Women

Years of Age	Austria				Bulgaria			Ex-onus	Hungary		Croatia Slavonia		
	1901-1905		1906-1910		1906-1910		1921-1926		1900-1901				
	1905-1900	1901-1905	1906-1910	1913	1928	1901-1905	1926-1927		1900-1901	1920-1921			
Years Lived by 1000 Live-Born Females													
15-19	28 4	27 4	28 4	25 5	25 1	23 5	23 5	35 1	56 8	43 6	45 2		
20-24	181 1	176 4	173 2	156 6	94 2	288 6	291 7	246 4	289 0	207 3	250 6		
25-29	265 2	260 1	244 6	218 7	107 3	312 2	307 3	242 6	280 0	205 6	287 9		
30-34	280 3	245 2	228 9	200 0	88 1	309 4	290 1	208 7	230 5	147 9	245 7		
35-39	182 2	171 7	160 2	140 0	59 6	204 3	211 8	155 4	161 4	103 5	172 0		
40-44	88 0	85 0	80 3	68 5	23 0	121 0	124 1	78 9	69 3	42 3	87 3		
45-49	17 6	17 0	16 1	13 7	4 0	55 5	56 1	35 8	13 9	8 5	17 5		

Live-Born per 1000 Women in Stationary Population

Years of Age	Austria				Bulgaria			Ex-onus	Hungary		Croatia Slavonia		
	1901-1905		1906-1910		1906-1910		1921-1926		1900-1901				
	1905-1900	1901-1905	1906-1910	1913	1928	1901-1905	1926-1927		1900-1901	1920-1921			
Years Lived by 1000 Live-Born Females													
15-19	90	90 96	97 58	91	106	78 54	76	130	176 53	146 05	135 84		
20-24	553	565 72	575 92	543	391	920 13	897	781	769 08	672 52	717 00		
25-29	778	801 70	784 21	732	429	942 50	893	806	791 80	639 97	780 29		
30-34	731	723 85	703 71	645	351	850 82	795	693	684 03	541 02	617 92		
35-39	457	453 03	471 23	434	232	565 08	562	418	417 34	276 48	417 92		
40-44	223	227 10	224 99	203	87	305 00	302	216	167 34	115 92	199 39		
45-49	42	42 90	42 59	39	17	131 27	129	86	31 45	22 09	37 08		
Total	2904	2935 26	2900 23	2687	1613	3805 94	3639	2997	2968 67	2335 83	2019 59		

FERTILITY TABLES, 1895-1929—Continued

Years of Age	Latvia		Poland (Provinces of Poznań and Pomorze)					Russia (Europe)	Ukraine		Moscow		Serbia	
	1929		1921	1922	1923	1924	1925	1926	1896-1897	1898-1897	1928-1927	1926-1927	1900-1901	
Years Lived by 1000 Live-Born Females														
15-19	4,365	3,698.1	3,811.67	3,851.4	3,918.0	3,936.8	3,829.5	2,870.9	3,011.55	3,631.58	3,839.47	4,018 <sup>a</sup>		
20-24	4,325	3,577.2	3,728.06	3,775.6	3,843.6	3,869.7	3,752.2	2,854.2	2,785.20	3,430.68	3,723.25	2,532 <sup>a</sup>		
25-29	4,277	3,471.1	3,630.53	3,685.9	3,751.4	3,788.8	3,681.8	2,855.6	2,685.34	3,325.37	3,651.05	2,802		
30-34	4,225	3,358.4	3,523.10	3,583.3	3,649.3	3,697.1	3,563.1	2,860.8	2,630.82	3,215.58	3,568.31	2,611		
35-39	4,170	3,230.7	3,406.39	3,471.7	3,540.0	3,588.5	3,457.3	2,806.9	2,397.97	3,100.70	3,465.39	2,419		
40-44	4,113	3,096.0	3,286.48	3,355.2	3,426.7	3,478.0	3,347.2	2,144.4	2,236.84	2,977.30	3,333.23	2,230		
45-49	4,046	2,960.5	3,156.37	3,229.3	3,304.2	3,365.1	3,234.1	2,007.1						
Total	29,521	23,362.0	24,542.60	24,952.6	25,432.2	25,724.0	24,845.2	16,539.9	18,537.16	23,217.17	25,367.12	19,605		
Live-Born <sup>c</sup> per 1000 Women in Stationary Population														
15-19	9.7	10.0	12.1	11.5	13.4	12.4	12.1	30	32	43.1	26.4	81.3 <sup>a</sup>		
20-24	82.9	124.0	185.0	131.8	123.1	130.2	112.9	309	328	237.7	146.1	277.0 <sup>a</sup>		
25-29	126.0	251.3	292.1	234.4	211.1	212.6	192.6	334	355	258.7	133.5	364.8		
30-34	110.7	237.9	227.4	222.3	207.5	211.3	196.1	331	352	223.5	92.4	243.7		
35-39	77.5	195.9	188.0	179.1	162.5	160.3	156.3	219	232	157.2	54.1	137.2		
40-44	29.8	97.7	92.2	90.3	82.9	86.3	83.0	130	138	82.3	21.4	58.1		
45-49	5.9	15.1	13.9	13.0	11.6	11.7	11.4	59	63	24.4	3.7	10.4		
Live-Born <sup>c</sup> per 1000 Women in Stationary Population														
15-19	43	36.8	46.03	44.3	52.5	48.9	46.5	80	96	155.49	101.54	327 <sup>a</sup>		
20-24	358	443.7	514.63	497.8	472.9	465.1	433.7	799	953	839.70	553.23	701 <sup>b</sup>		
25-29	539	572.1	615.15	564.1	532.0	505.6	470.4	833	990	857.68	497.07	1,062		
30-34	468	386.9	400.96	396.8	377.4	361.2	348.9	789	958	743.08	337.61	589		
35-39	323	633.9	640.31	620.7	575.3	609.7	540.2	496	590	508.08	193.08	358		
40-44	122	302.4	303.09	303.1	284.0	300.0	277.9	278	330	258.01	174.09	141		
45-49	24	44.6	43.98	42.4	38.3	39.2	36.8	119	141	73.08	12.39	23		
Total	1,877	3,131.4	3,264.17	3,169.9	2,972.3	3,049.6	2,728.8	3,392	4,038	3,461.73	1,768.71	3,322		

<sup>a</sup> 15-20 years.<sup>b</sup> 21-24 years.<sup>c</sup> Latvia: Live- and still-born.



(1) The years lived by 1,000 live-born females in each age group are derived from the number of female survivors of the life table by assuming that the years lived by 1,000 women of 15 to 16 years would be equal to the average of the women surviving 15 and those surviving 16 years, etc. The number of female survivors has been taken from the life tables given on page 162 with the exception of those for Austria 1895-1900, 1913, 1928, Bulgaria 1906-1910, 1921-1926, 1926-1927, Estonia 1922-1923, Latvia 1929, Poland (Poznań and Pomorze) 1921, 1923, 1924, 1925, 1926, and Serbia 1900-1901. As to Austria 1895-1900, we have computed the number of female survivors from the probabilities table published in *Österreichische Statistik*, Vol. LXV, Part 5, pp. 167-168. The data for Poland have been derived from the tables published by Szulc in *Revue Trimestrielle de Statistique de la République Polonaise*, Vol. V, 1928, p. 938, Vol. VII, 1930, p. 12. In all other cases where no official life tables have been calculated, we have computed abridged life tables ourselves by using the method of Becker-Zeuner, as simplified by Rahts, with a modification for the first year of age suggested by the author.<sup>1</sup>

(2) The fertility rates have been taken from the tables on pages 18, 30, 42, 152, 153, 155. Whenever the official statistics classify the births by decennial age groups of mothers, the distribution by quinquennial age groups has been estimated.

(3) The adjustment of the fertility rates to the age composition derived from the life tables has been effected by multiplying (1) by (2).<sup>2</sup>

<sup>1</sup> See Kuczynski, R. R., *Fertility and Reproduction*, pp. 17-19.

<sup>2</sup> Since in the case of Bulgaria the live-born for 1900 were not classified by age of mothers, while mortality in 1900 did not essentially differ from that of 1901-1905, we have adjusted the fertility rates of 1901-1905 to the survivors according to the life table of 1900-1905.

## APPENDIX E

### RATE OF INCREASE OF STABLE POPULATION

In the first volume of this series, we carried our analysis up to the computation of fertility tables from which we derived net reproduction rates. The net reproduction rate shows the balance of births and deaths in a population whose age distribution is that of the *stationary* population, that is of the population constantly subject to the mortality indicated by the life table. In this volume we go a step further by computing the balance of births and deaths in a population whose age distribution is that of the *stable* population, that is of the population constantly subject to the mortality indicated by the life table, but also constantly subject to the fertility indicated by present fertility rates. Birth rates, death rates, and rates of increase for the stable female population as well as for the stationary and the actual female population will be found on pages 20, 32, 35, 39, 44, 45, 47, 50, 53. The tables there given cover also the length of the female generation for the stable population. For methodological details, see the volume *Fertility and Reproduction*.

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